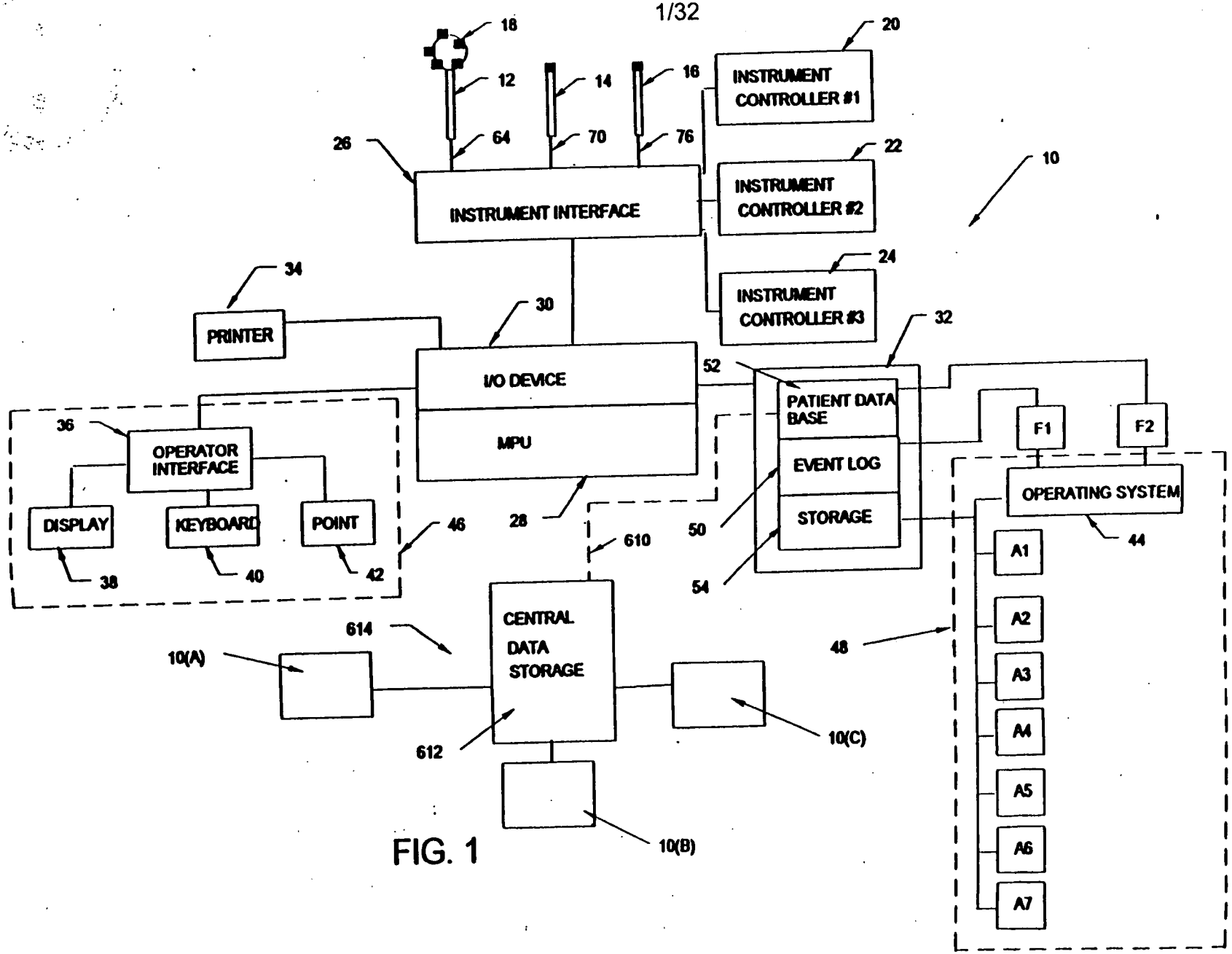

18
12
14
16
20
INSTRUMENT CONTROLLER #1
64
70
76
26
INSTRUMENT INTERFACE
22
INSTRUMENT CONTROLLER #2
10
24
INSTRUMENT CONTROLLER #3
34
PRINTER
30
32
I/O DEVICE
MPU
52
PATIENT DATA BASE
EVENT LOG
STORAGE
F1
F2
OPERATING SYSTEM
44
36
OPERATOR INTERFACE
DISPLAY
KEYBOARD
POINT
38
40
42
46
28
610
50
54
614
CENTRAL DATA STORAGE
48
A1
A2
A3
A4
A5
A6
A7
10(A)
612
10(C)
10(B)

FIG. 1

FIG. 2

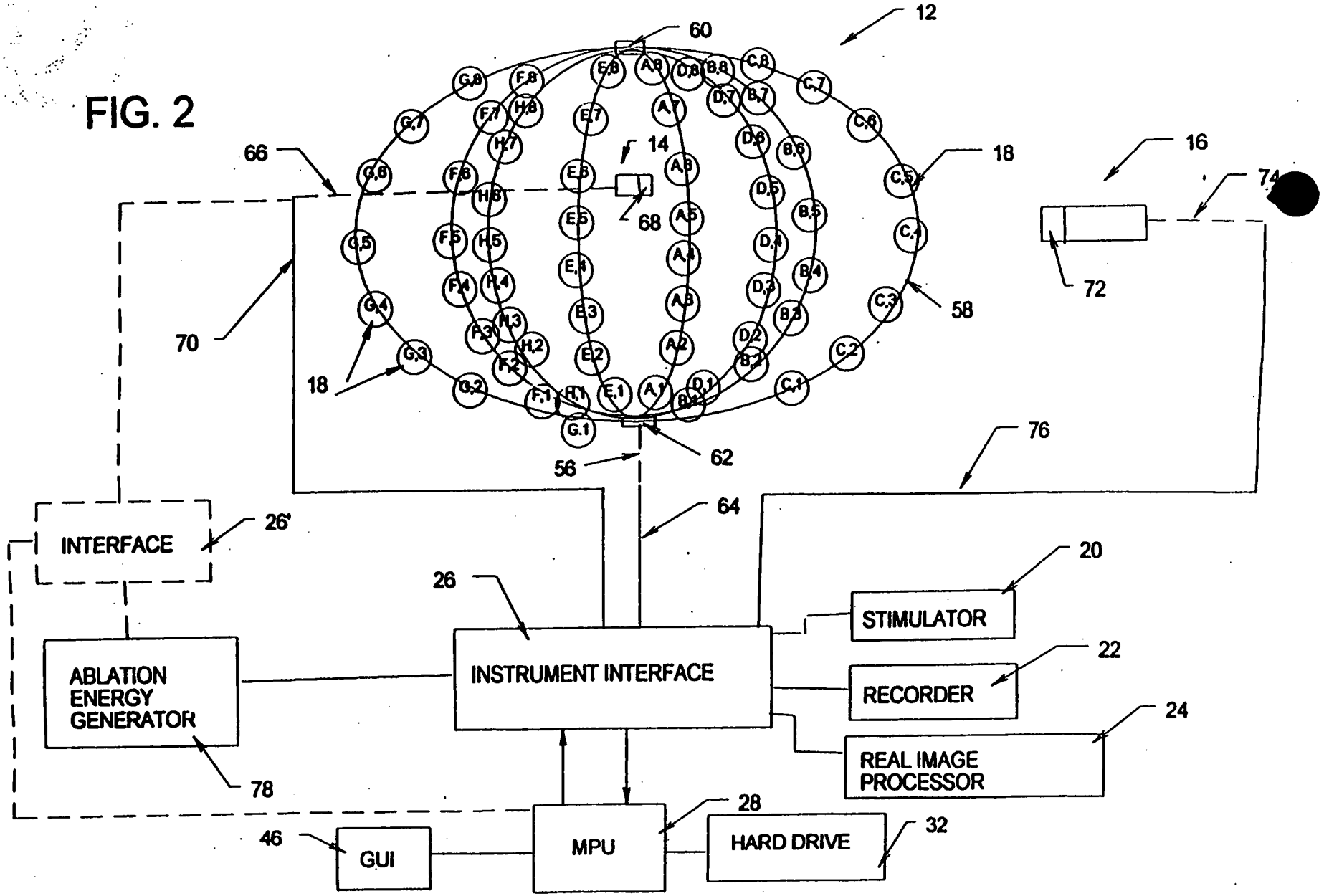

12
60
66
18
16
74
14
68
72
70
58
18
56
62
76
64
INTERFACE
26'
26
20
STIMULATOR
ABLATION ENERGY GENERATOR
INSTRUMENT INTERFACE
22
RECORDER
24
REAL IMAGE PROCESSOR
78
28
46
GUI
MPU
HARD DRIVE
32

FIG. 3

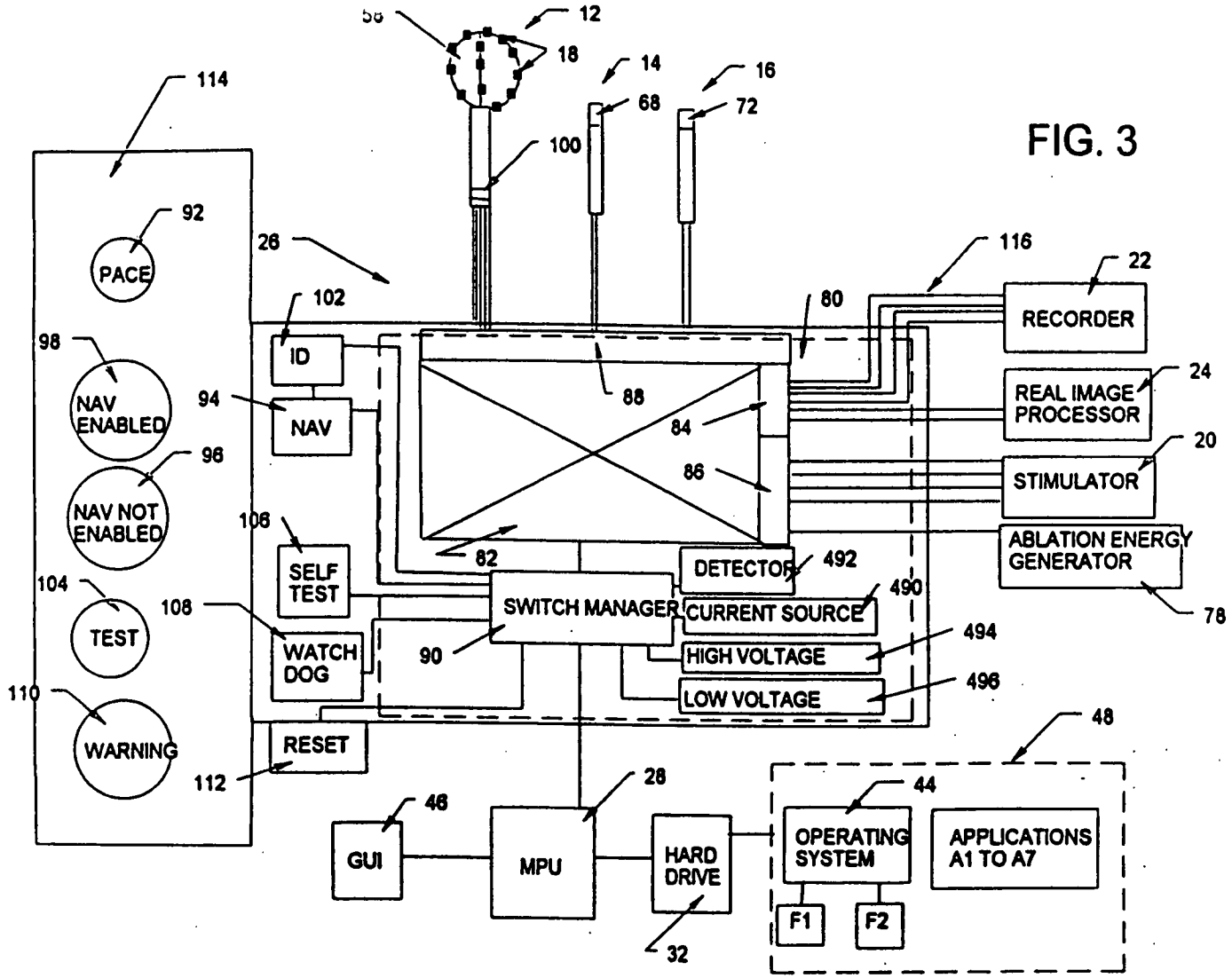
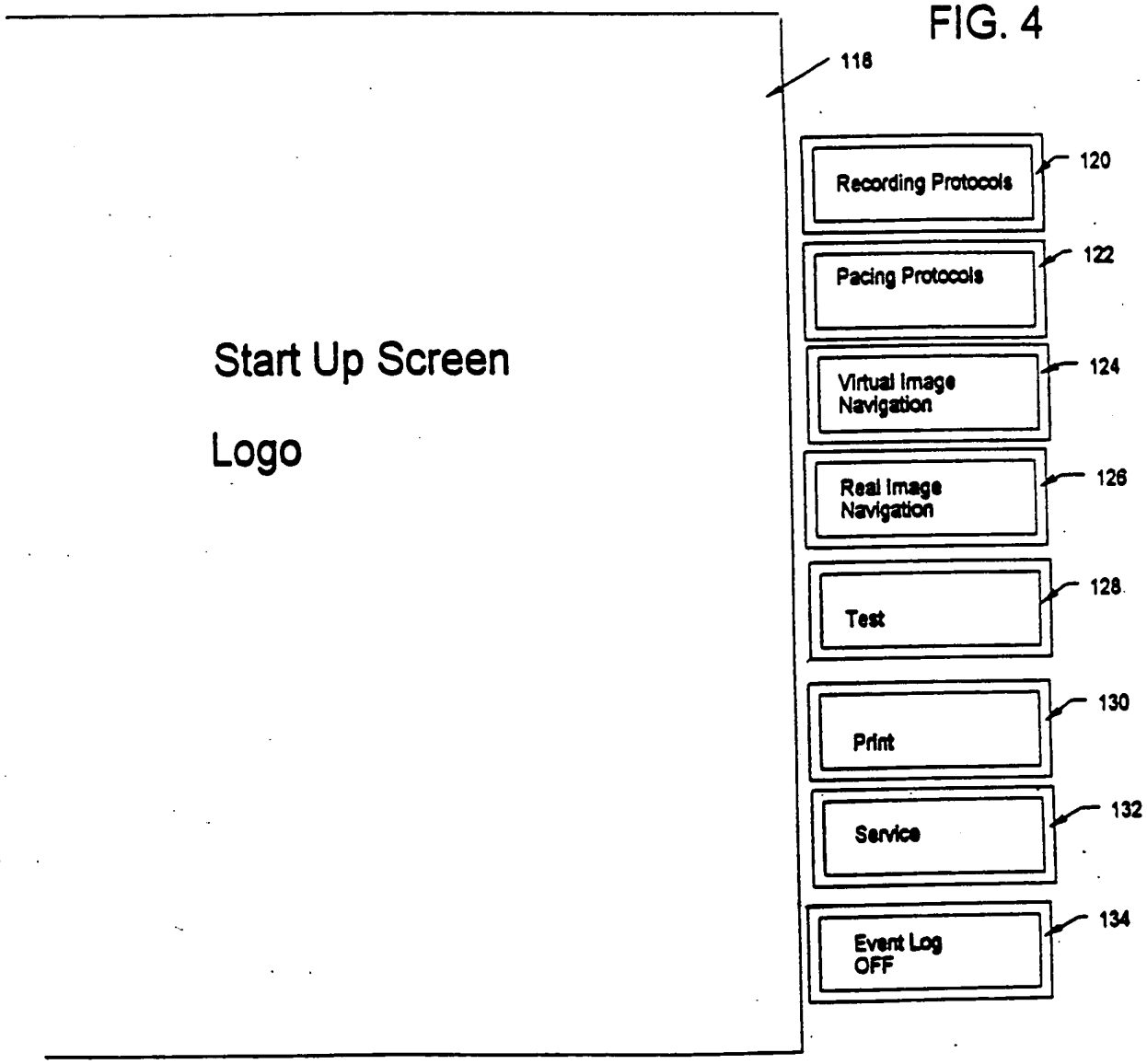

12
18
14
16
68
72
100
114
92
PACE
26
102
ID
98
NAV ENABLED
94
NAV
96
NAV NOT ENABLED
106
SELF TEST
104
TEST
108
WATCH DOG
110
WARNING
RESET
112
88
84
86
82
80
116
RECORDER
22
REAL IMAGE PROCESSOR
24
STIMULATOR
20
ABLATION ENERGY GENERATOR
78
DETECTOR
492
SWITCH MANAGER
CURRENT SOURCE
490
90
HIGH VOLTAGE
494
LOW VOLTAGE
496
48
44
OPERATING SYSTEM
APPLICATIONS A1 TO A7
F1
F2
46
GUI
MPU
28
HARD DRIVE
32

FIG. 4



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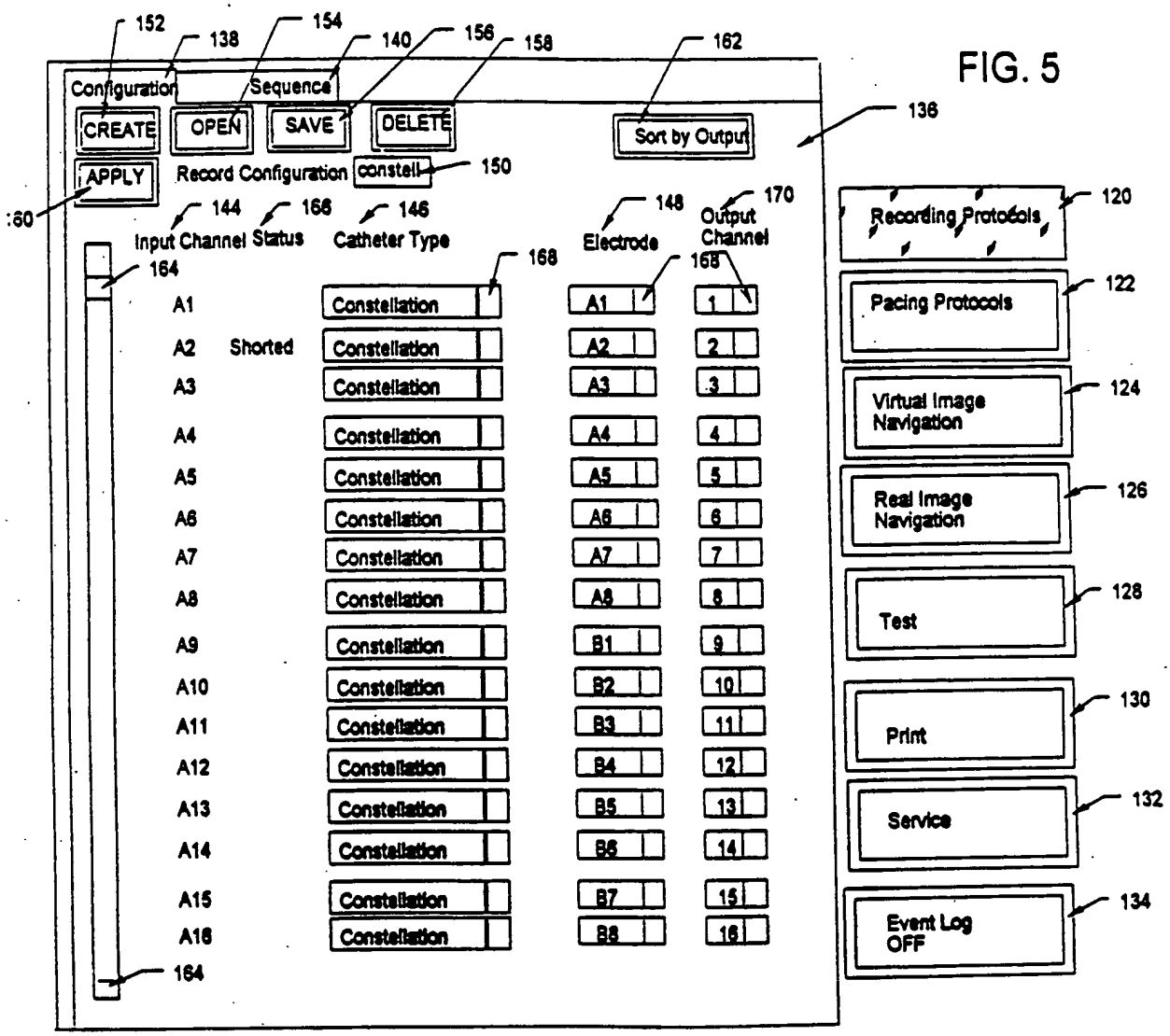

152
138
154
140
156
158
162
Configuration
Sequence
CREATE
OPEN
SAVE
DELETE
Sort by Output
136
APPLY
Record Configuration
constell
150
160
144
166
146
148
170
Input Channel
Status
Catheter Type
Electrode
Output Channel
168
164
A1
Constellation
A1
1
A2
Shorted
Constellation
A2
2
A3
Constellation
A3
3
A4
Constellation
A4
4
A5
Constellation
A5
5
A6
Constellation
A6
6
A7
Constellation
A7
7
A8
Constellation
A8
8
A9
Constellation
B1
9
A10
Constellation
B2
10
A11
Constellation
B3
11
A12
Constellation
B4
12
A13
Constellation
B5
13
A14
Constellation
B6
14
A15
Constellation
B7
15
A16
Constellation
B8
16
164
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 5

FIG. 6

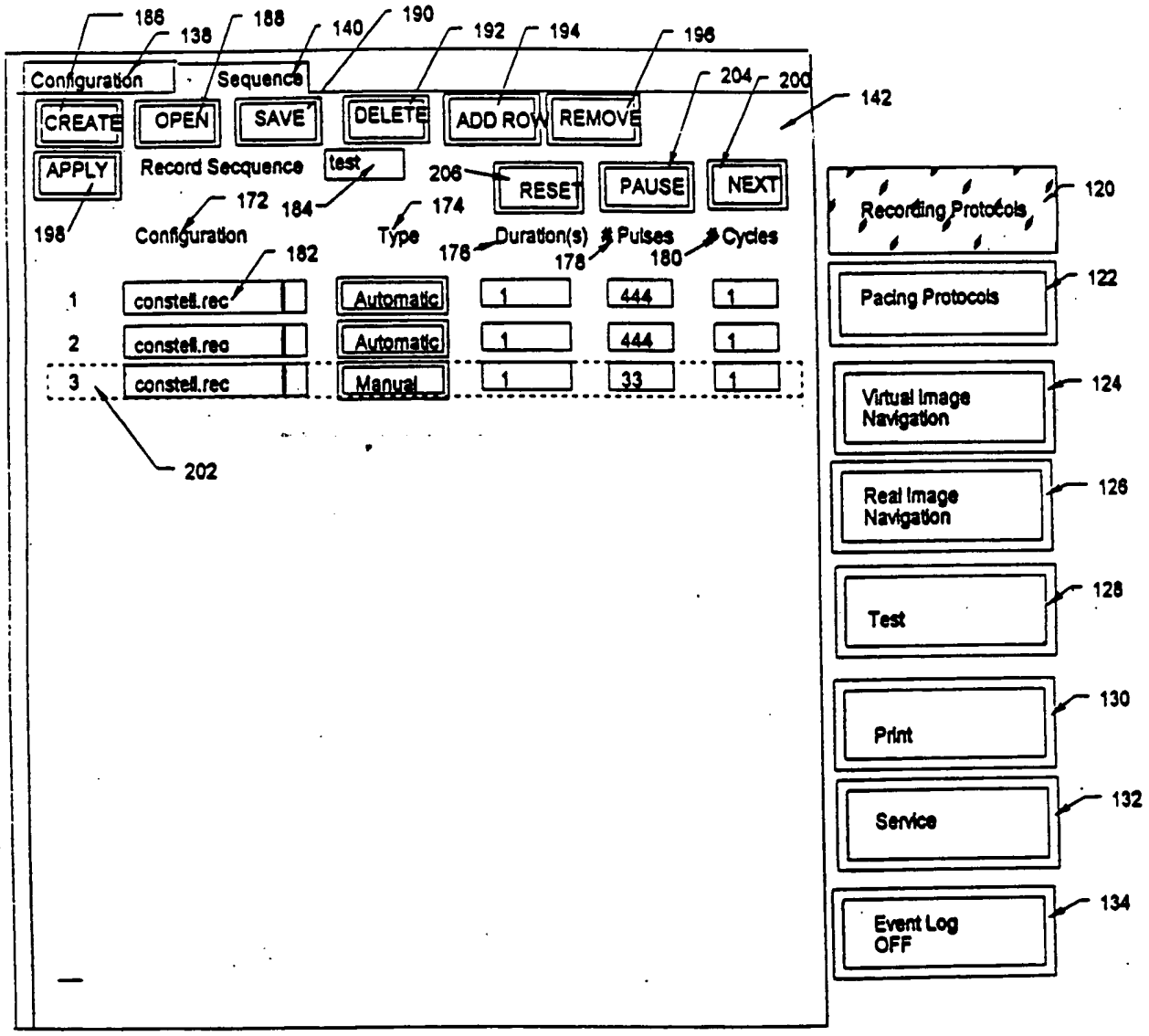

186
138
188
140
190
192
194
196
204
200
142
Configuration
Sequence
CREATE
OPEN
SAVE
DELETE
ADD ROW
REMOVE
APPLY
Record Secquence
test
206
RESET
PAUSE
NEXT
198
172
Configuration
184
174
Type
176
Duration(s)
178
Pulses
180
Cycles
182
1
constell.rec
Automatic
1
444
1
2
constell.rec
Automatic
1
444
1
3
constell.rec
Manual
1
33
1
202
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 7

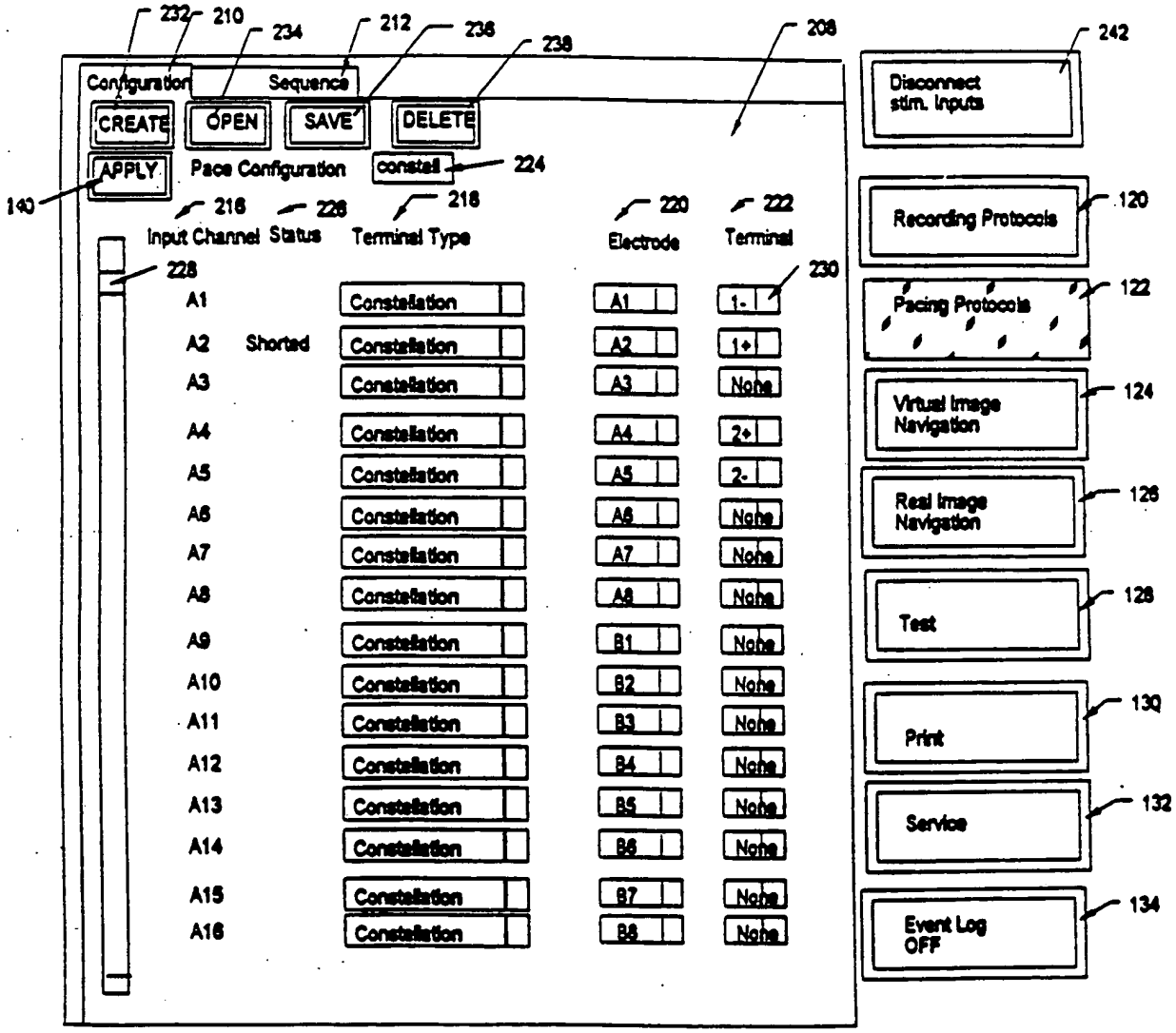
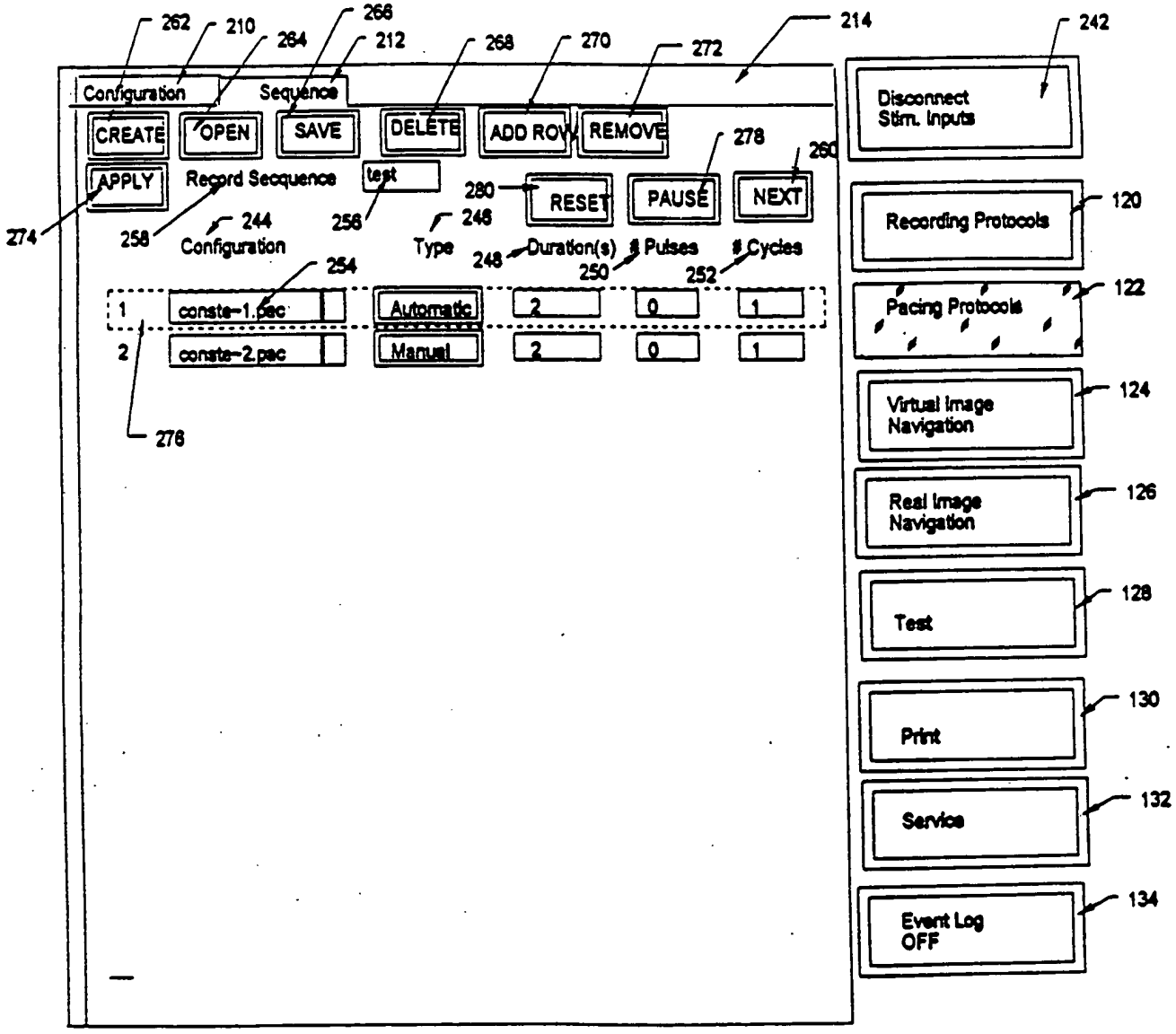

232
210
234
212
236
238
208
242
Configuration
Sequence
CREATE
OPEN
SAVE
DELETE
APPLY
Pace Configuration
constell
224
140
216
226
218
220
222
Input Channel
Status
Terminal Type
Electrode
Terminal
228
230
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
Shorted
Constellation
B1
B2
B3
B4
B5
B6
B7
B8
1-
1+
None
2+
2-
Disconnect stim. Inputs
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 8


262
210
264
266
212
268
270
272
214
242
Configuration
Sequence
CREATE
OPEN
SAVE
DELETE
ADD ROW
REMOVE
Disconnect Stim. Inputs
278
260
APPLY
Record Sequence
test
280
RESET
PAUSE
NEXT
Recording Protocols
120
274
258
244
Configuration
256
246
Type
248
Duration(s)
# Pulses
# Cycles
250
252
254
Pacing Protocols
122
1
conste-1.pac
Automatic
2
0
1
2
conste-2.pac
Manual
2
0
1
Virtual Image Navigation
124
276
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

9/32

FIG. 9

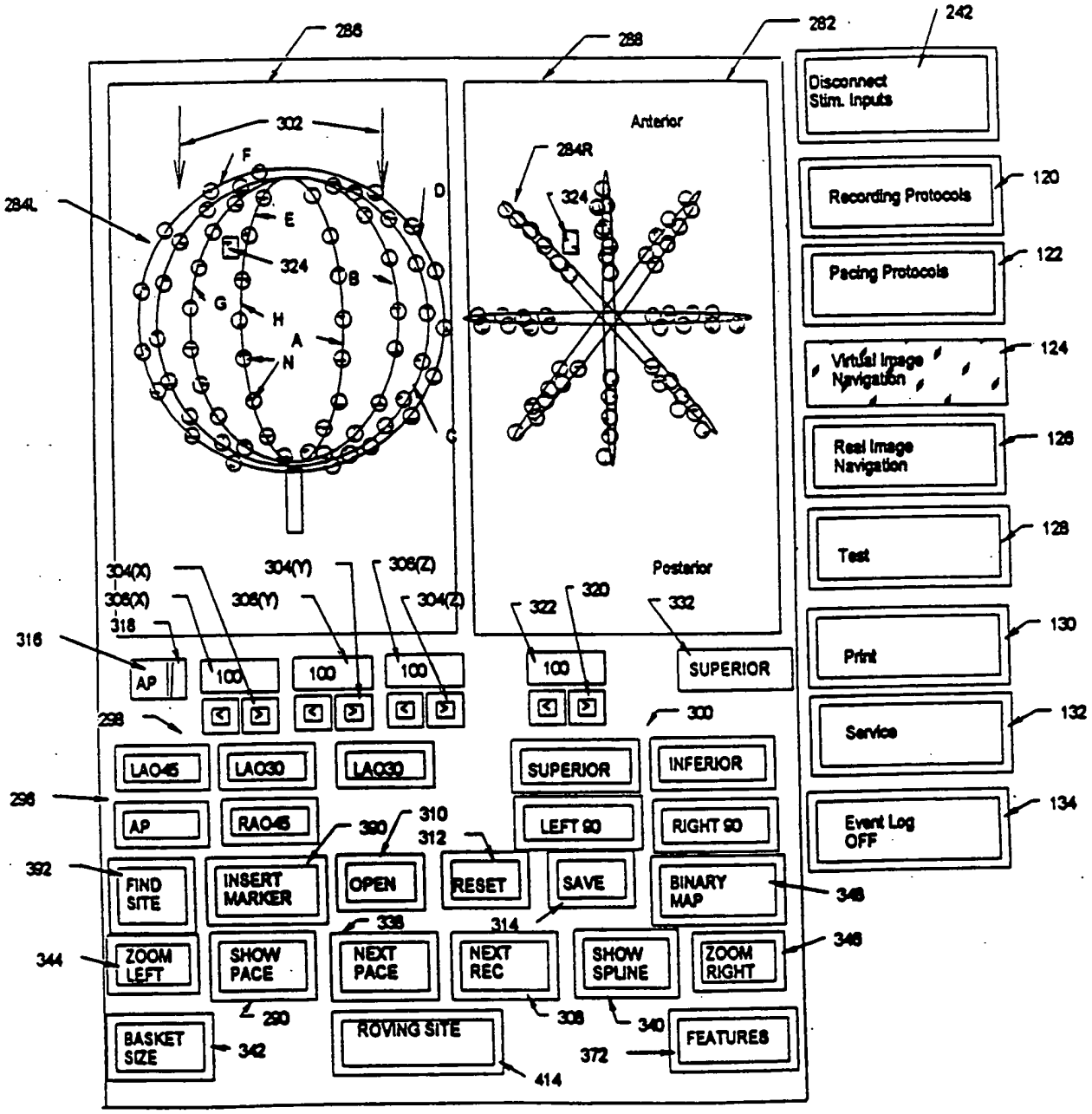

286
288
282
242
Disconnect Stim. Inputs
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134
302
F
D
E
284L
324
B
G
H
A
N
C
Anterior
284R
324
Posterior
304(X)
304(Y)
306(Z)
306(X)
306(Y)
304(Z)
318
316
AP
100
100
100
322
320
332
SUPERIOR
298
300
LAO45
LAO30
LAO30
SUPERIOR
INFERIOR
296
AP
RAO45
LEFT 90
RIGHT 90
310
312
380
392
FIND SITE
INSERT MARKER
OPEN
RESET
SAVE
BINARY MAP
348
338
314
344
ZOOM LEFT
SHOW PACE
NEXT PACE
NEXT REC
SHOW SPLINE
ZOOM RIGHT
346
290
308
340
BASKET SIZE
342
ROVING SITE
FEATURES
372
414

FIG. 10

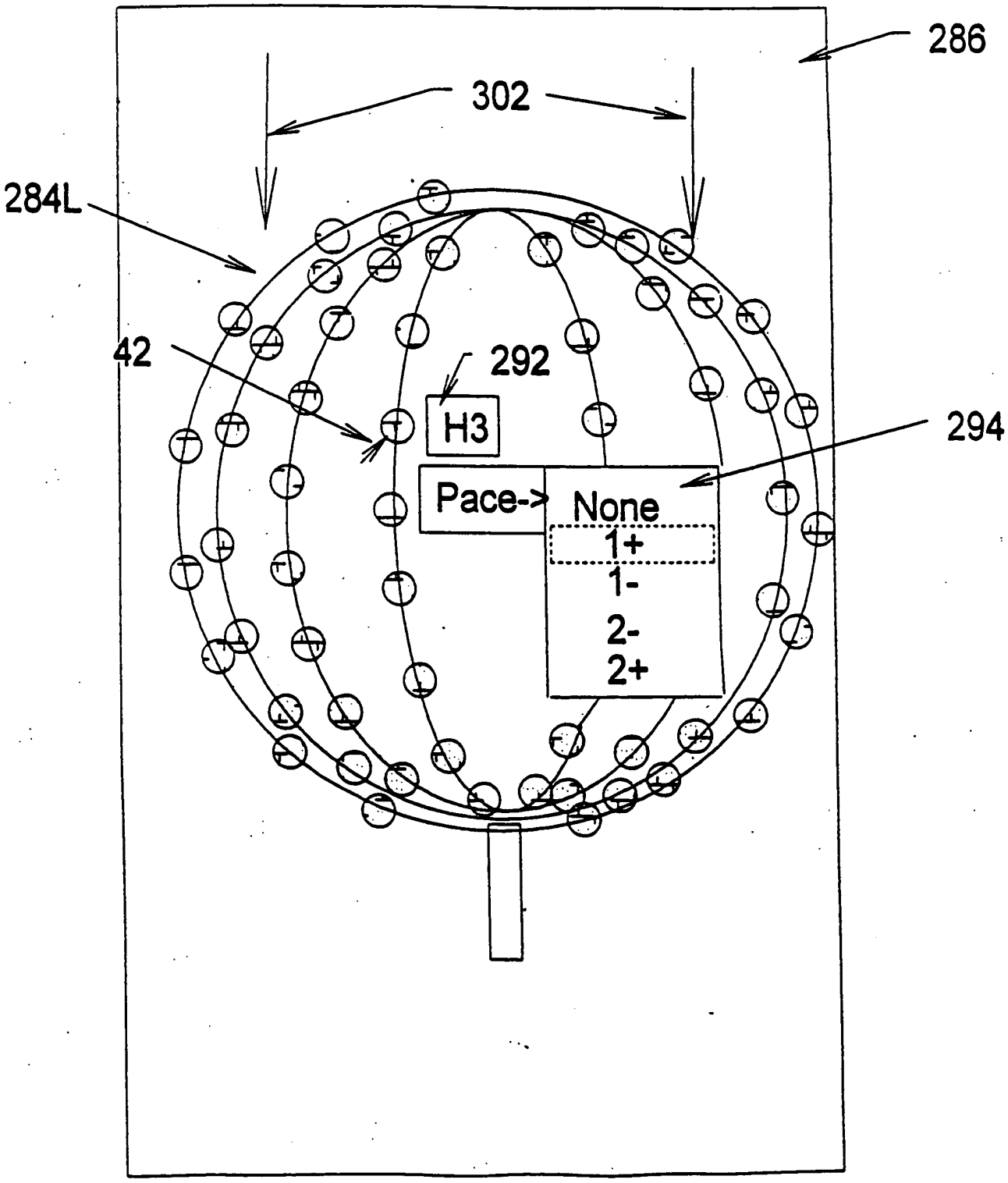


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FIG. 11

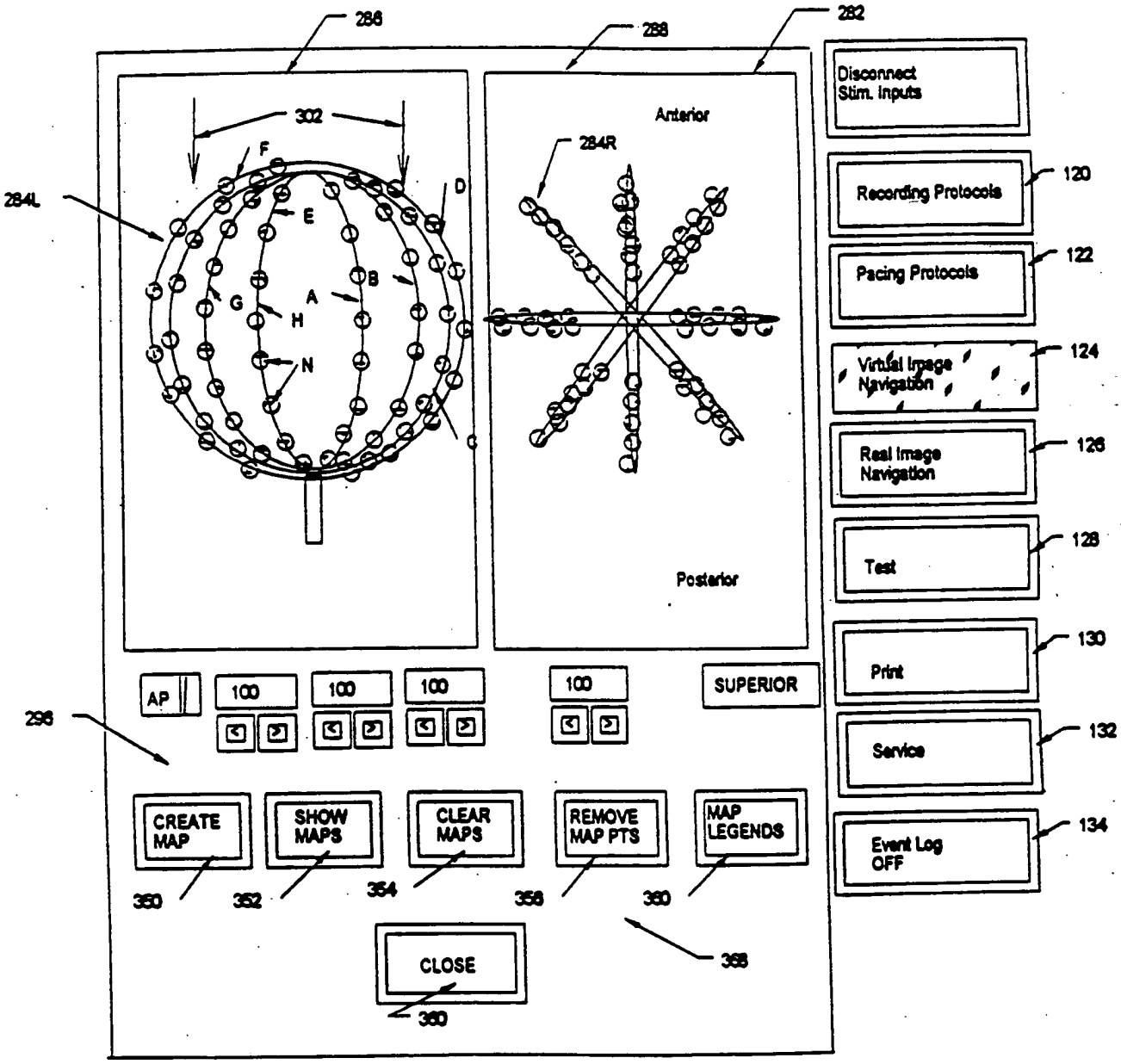

286
288
282
302
F
D
E
B
G
A
H
N
284L
284R
Anterior
Posterior
Disconnect Stim. Inputs
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134
AP
100
100
100
100
SUPERIOR
296
CREATE MAP
SHOW MAPS
CLEAR MAPS
REMOVE MAP PTS
MAP LEGENDS
350
352
354
356
360
CLOSE
358
360

FIG. 12

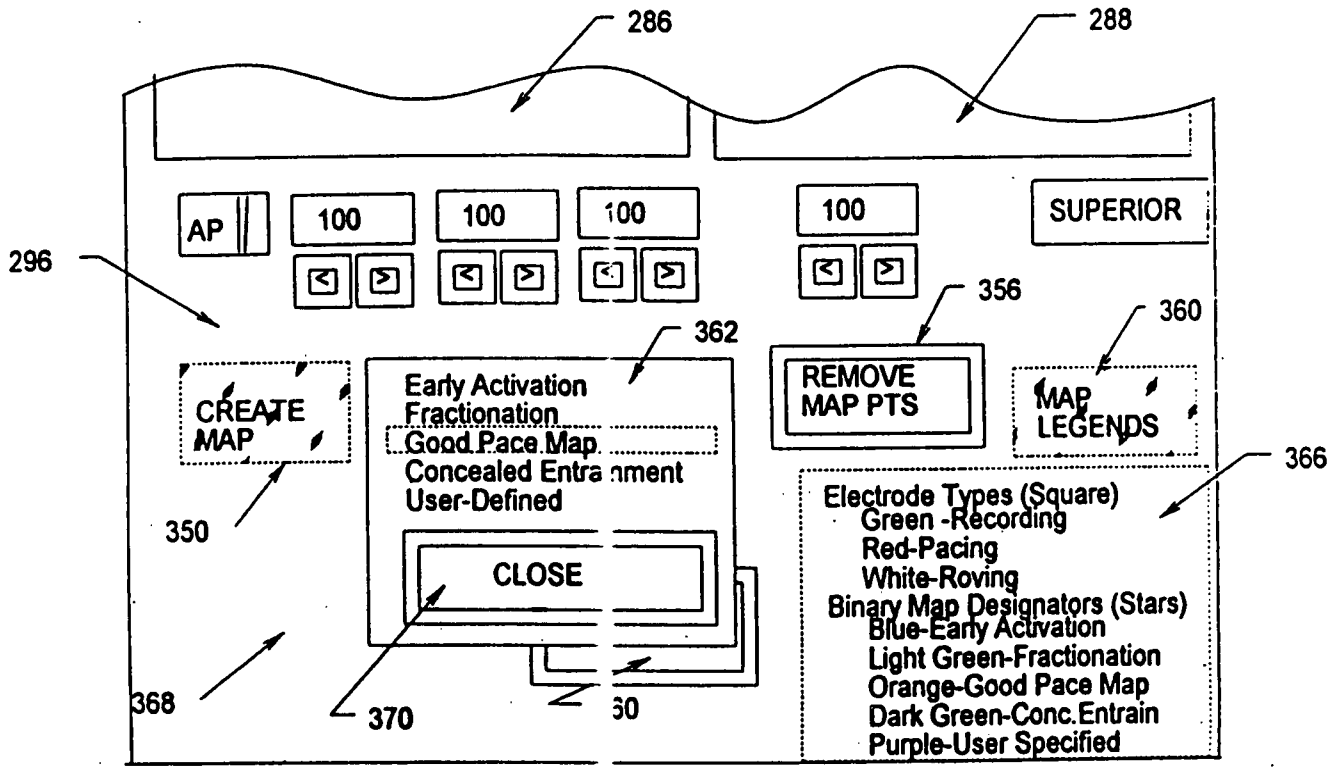
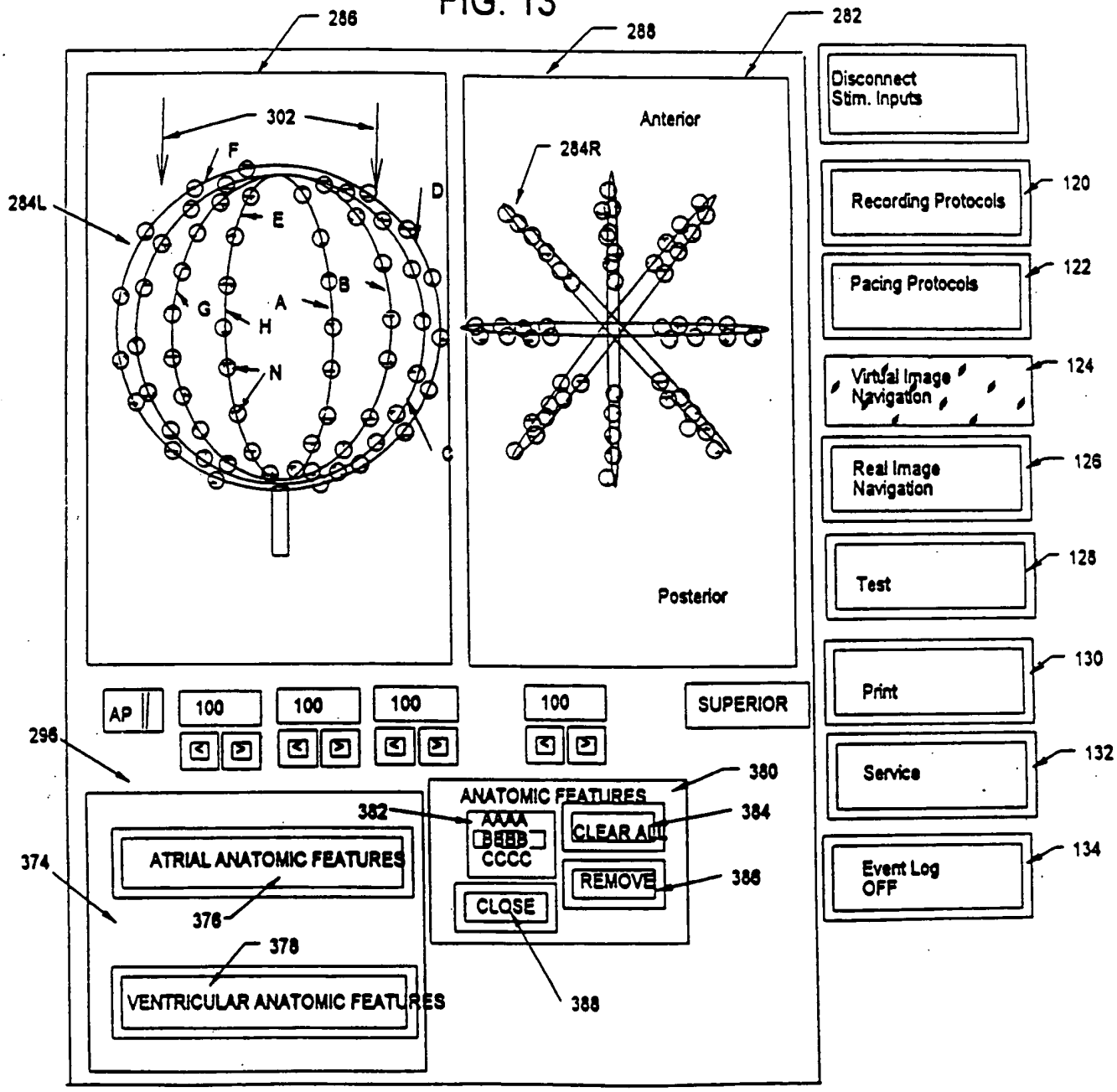

286
288
AP
100
100
100
100
SUPERIOR
296
356
360
362
CREATE MAP
Early Activation
Fractionation
Good Pace Map
Concealed Entra nment
User-Defined
REMOVE MAP PTS
MAP LEGENDS
366
350
Electrode Types (Square)
Green -Recording
Red-Pacing
White-Roving
Binary Map Designators (Stars)
Blue-Early Activation
Light Green-Fractionation
Orange-Good Pace Map
Dark Green-Conc.Entrain
Purple-User Specified
CLOSE
368
370
60

FIG. 13


286
288
282
302
F
E
D
284L
B
A
G
H
N
C
Anterior
284R
Posterior
Disconnect Stim. Inputs
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134
AP
100
100
100
100
SUPERIOR
296
ANATOMIC FEATURES
380
382
AAAA
BBBB
CCCC
CLEAR ALL
384
REMOVE
386
CLOSE
388
374
ATRIAL ANATOMIC FEATURES
376
378
VENTRICULAR ANATOMIC FEATURES

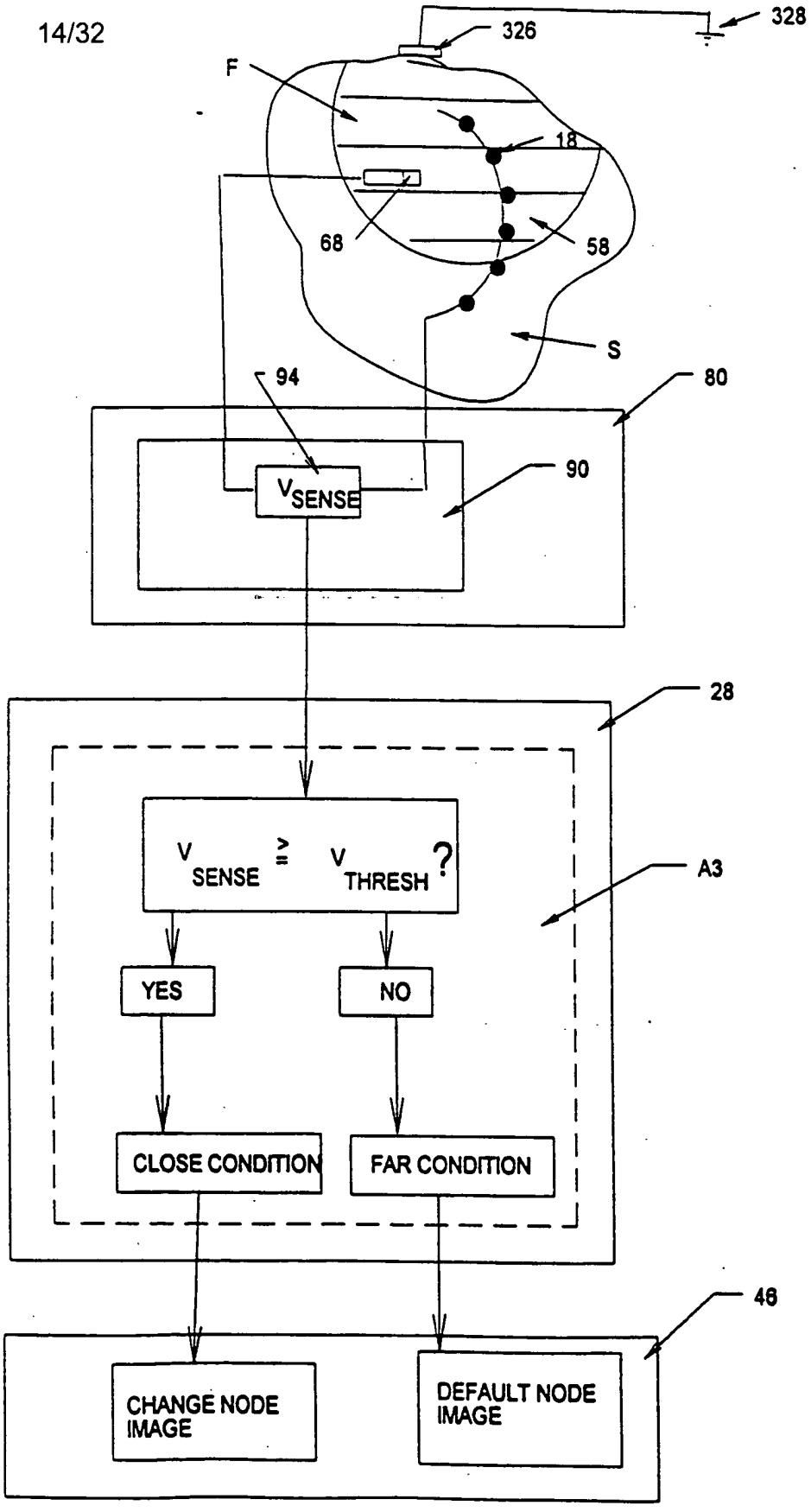


FIG. 14

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FIG. 15

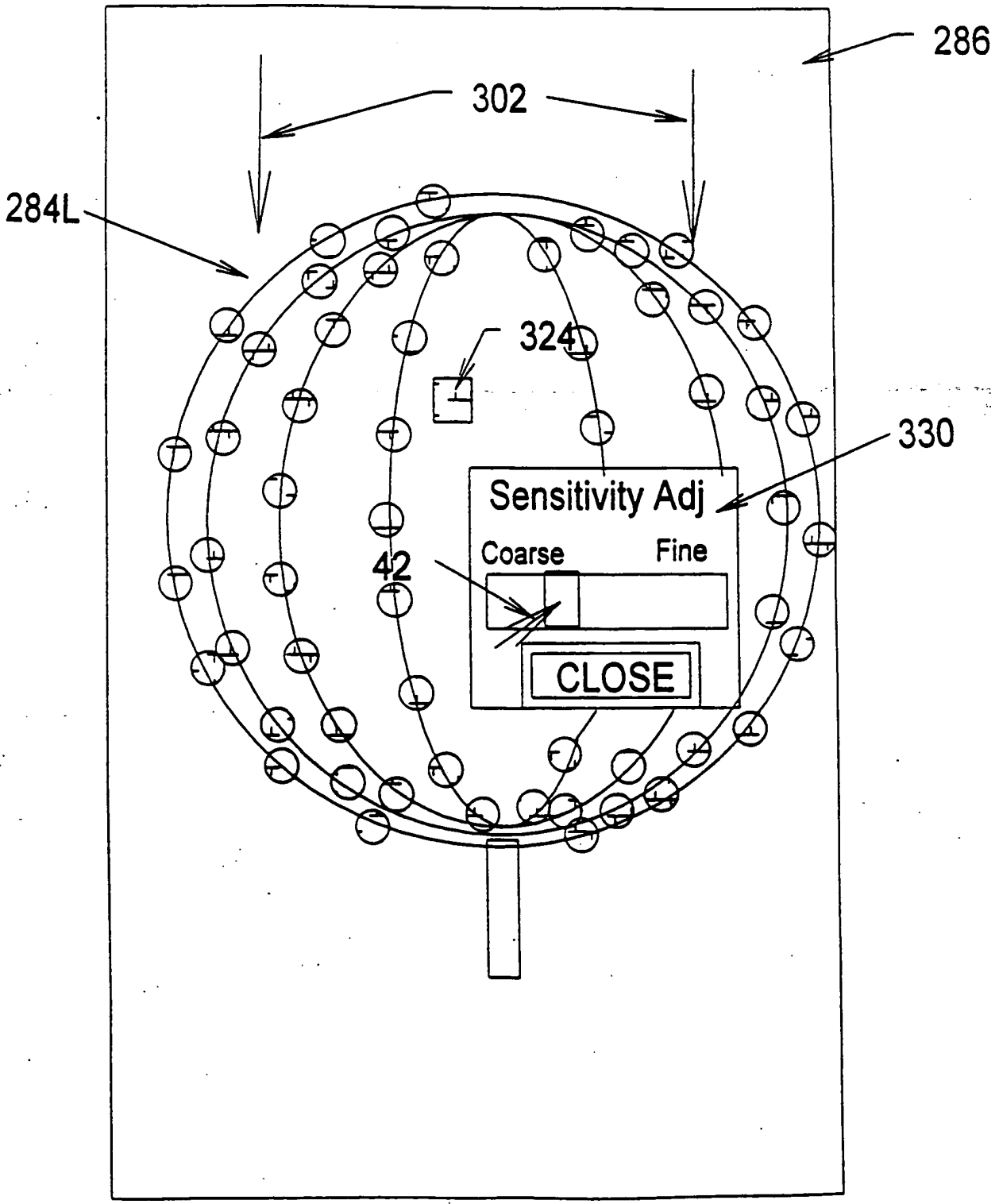

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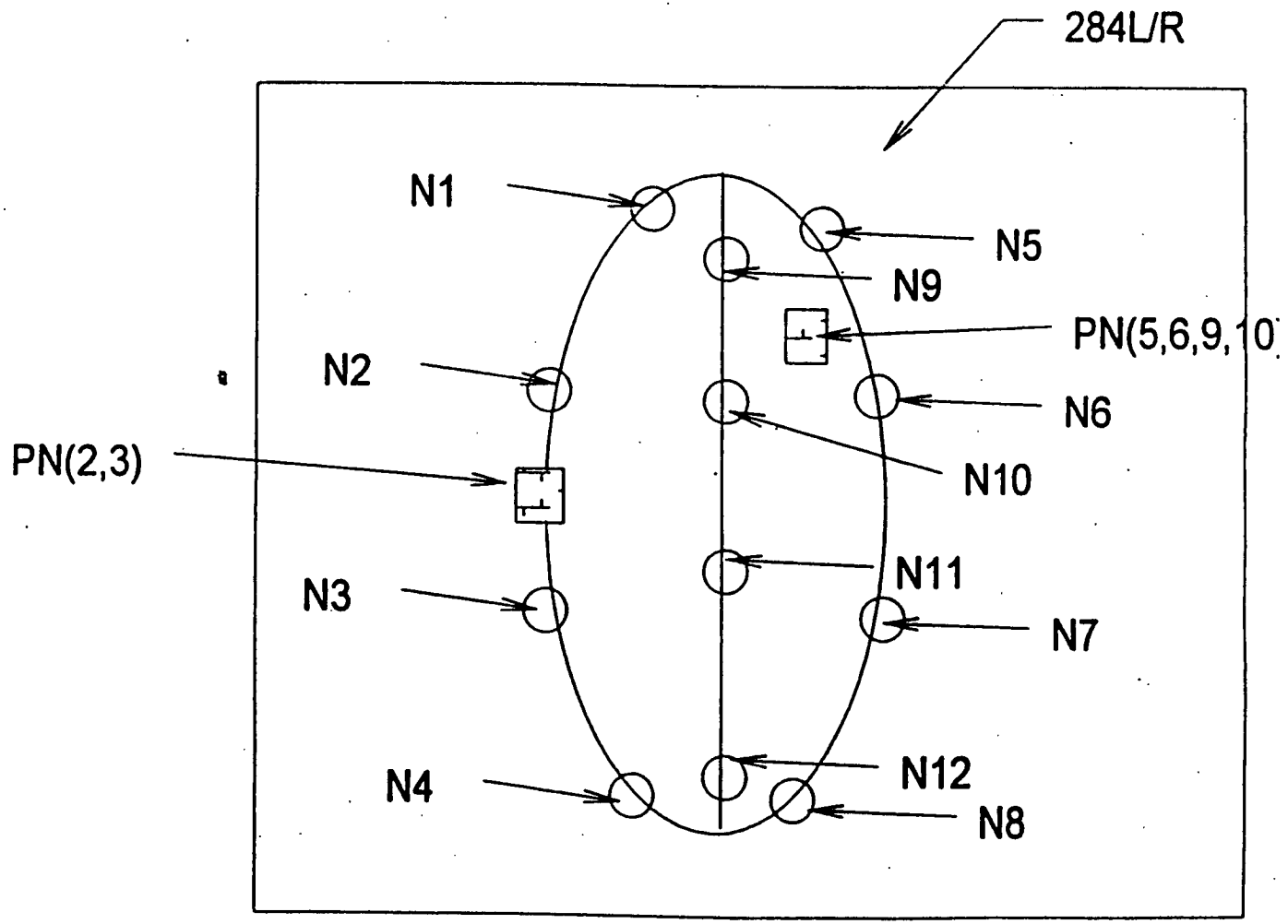
FIG. 16



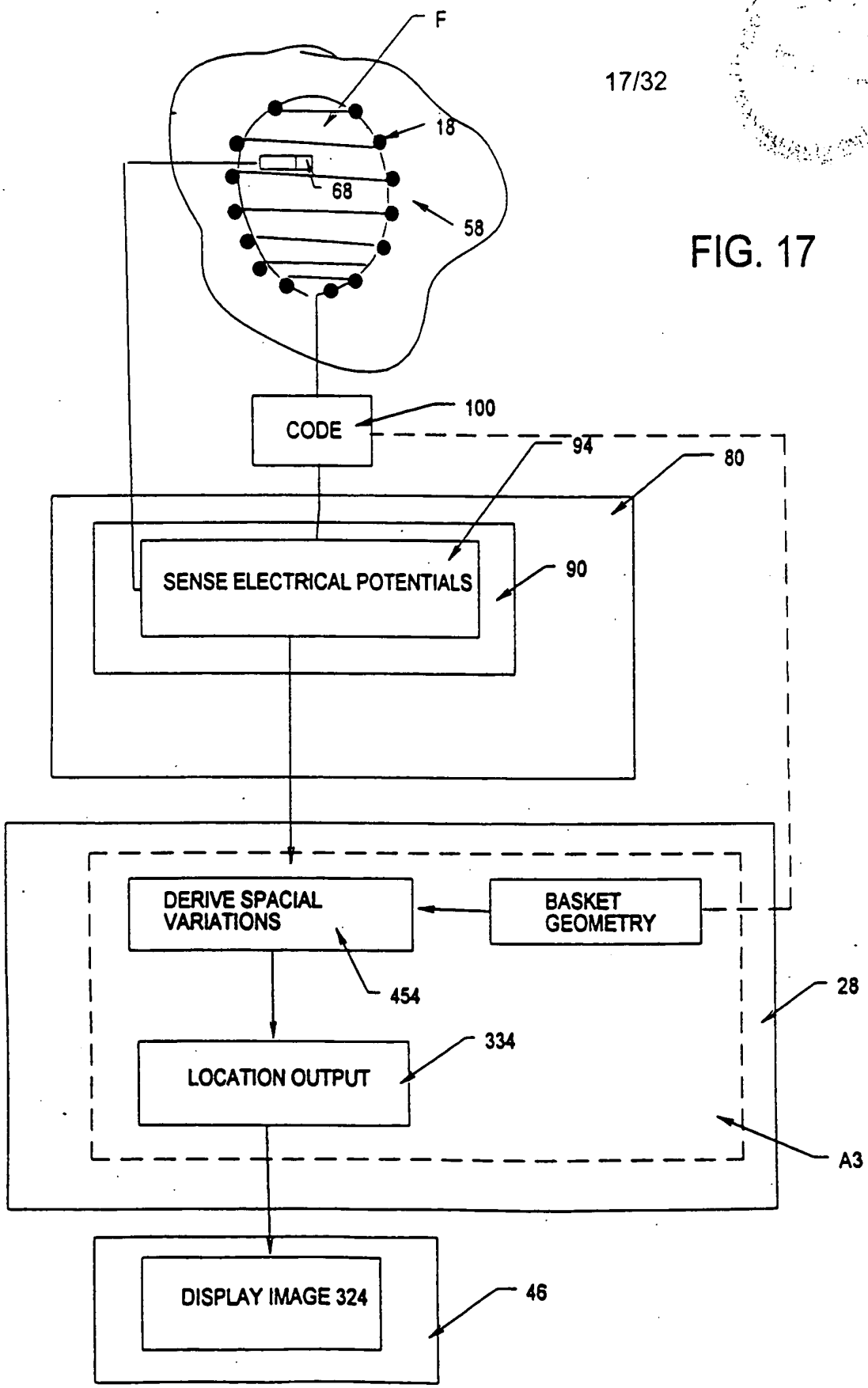


FIG. 17

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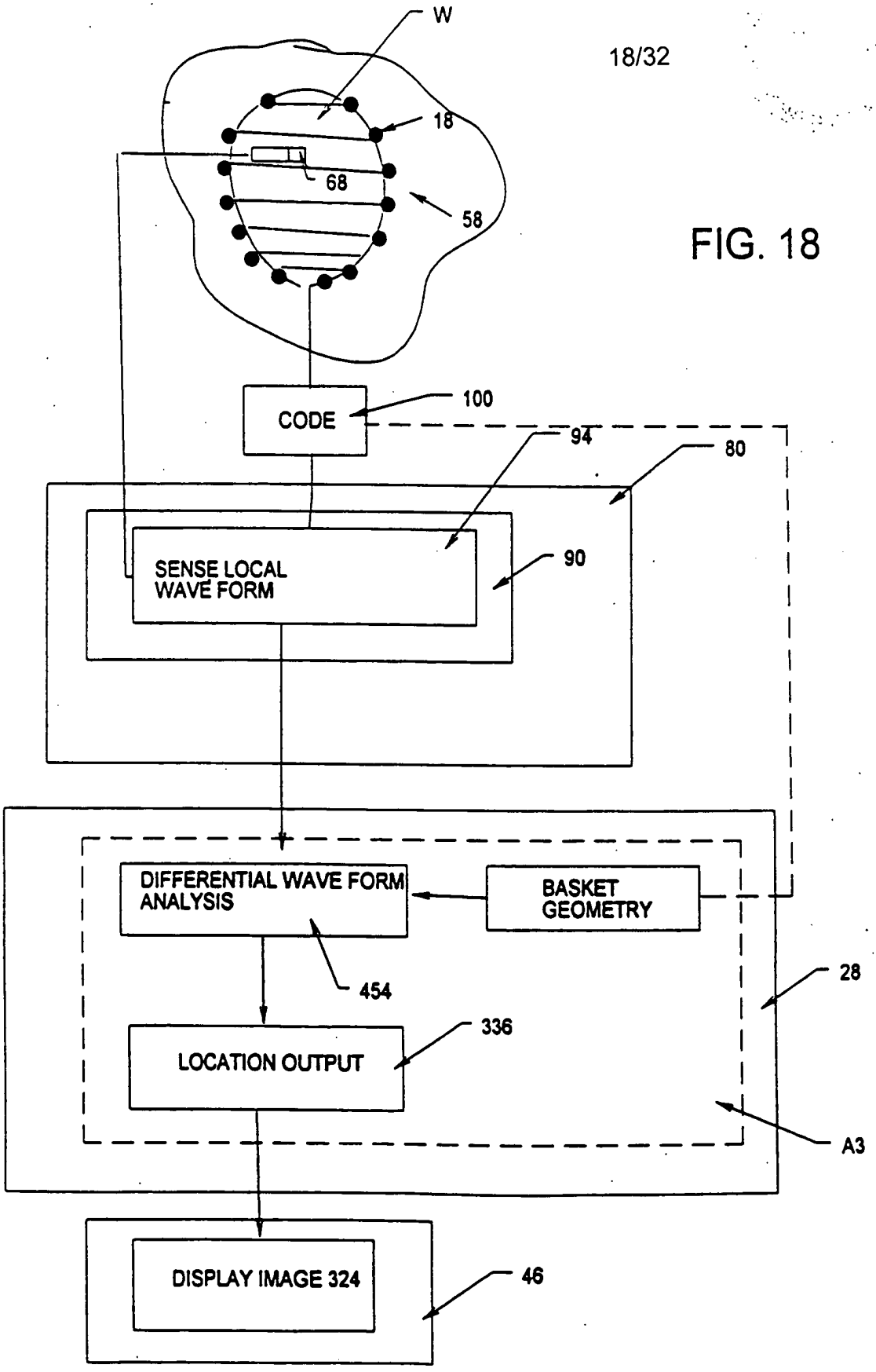

FIG. 18

10039415-042002

FIG. 19

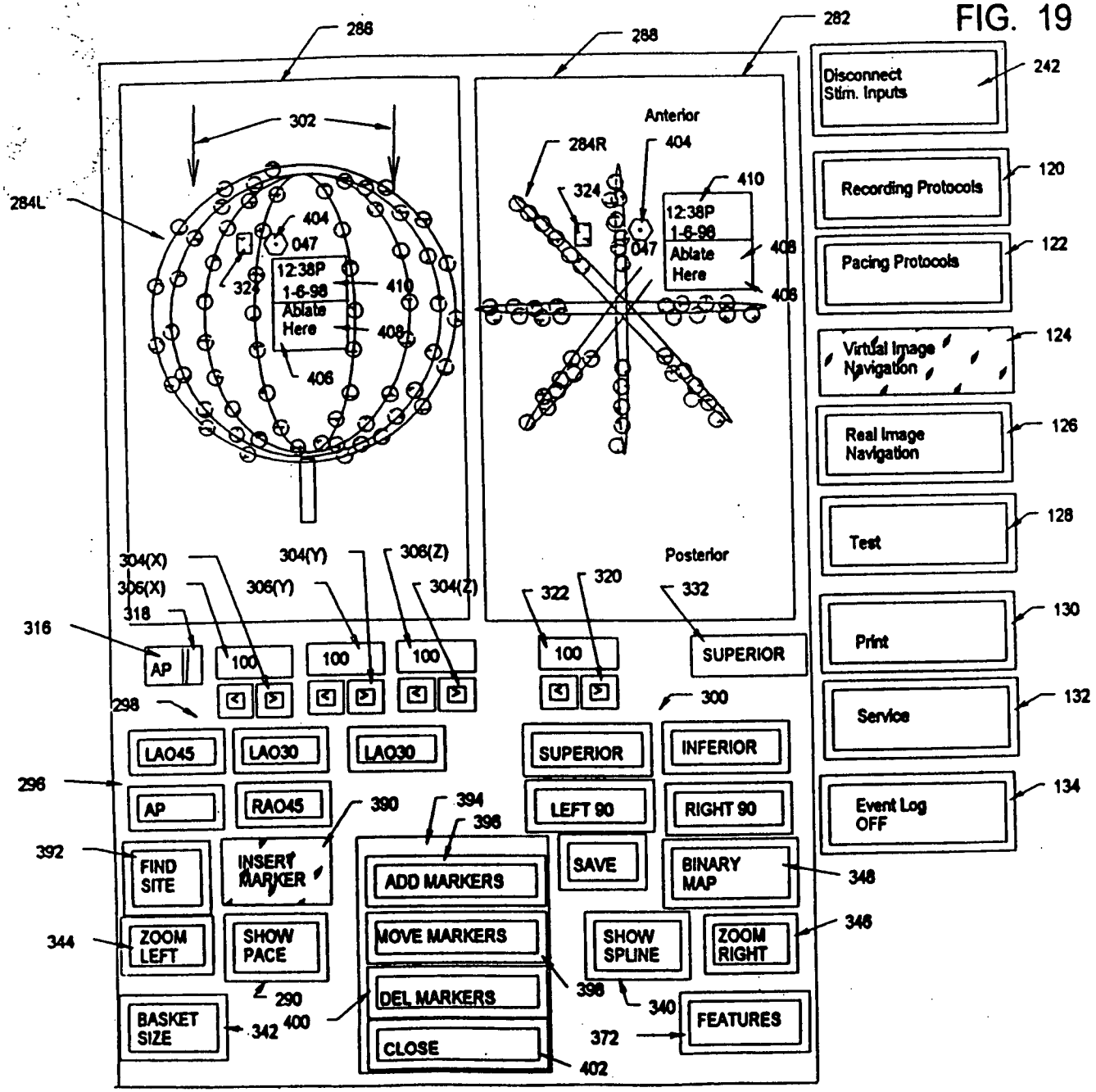
286
288
282
302
284L
284R
Anterior
Posterior
404
047
324
12:38P
1-6-98
Ablate
Here
410
408
406
304(X)
304(Y)
306(Z)
306(X)
306(Y)
304(Z)
318
316
322
320
332
AP
100
SUPERIOR
298
300
LAO45
LAO30
INFERIOR
296
RAO45
LEFT 90
RIGHT 90
390
394
396
392
FIND SITE
INSERT MARKER
ADD MARKERS
SAVE
BINARY MAP
348
344
ZOOM LEFT
SHOW PACE
MOVE MARKERS
SHOW SPLINE
ZOOM RIGHT
346
290
DEL MARKERS
340
BASKET SIZE
342
400
FEATURES
372
CLOSE
402
Disconnect Stim. Inputs
242
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 20

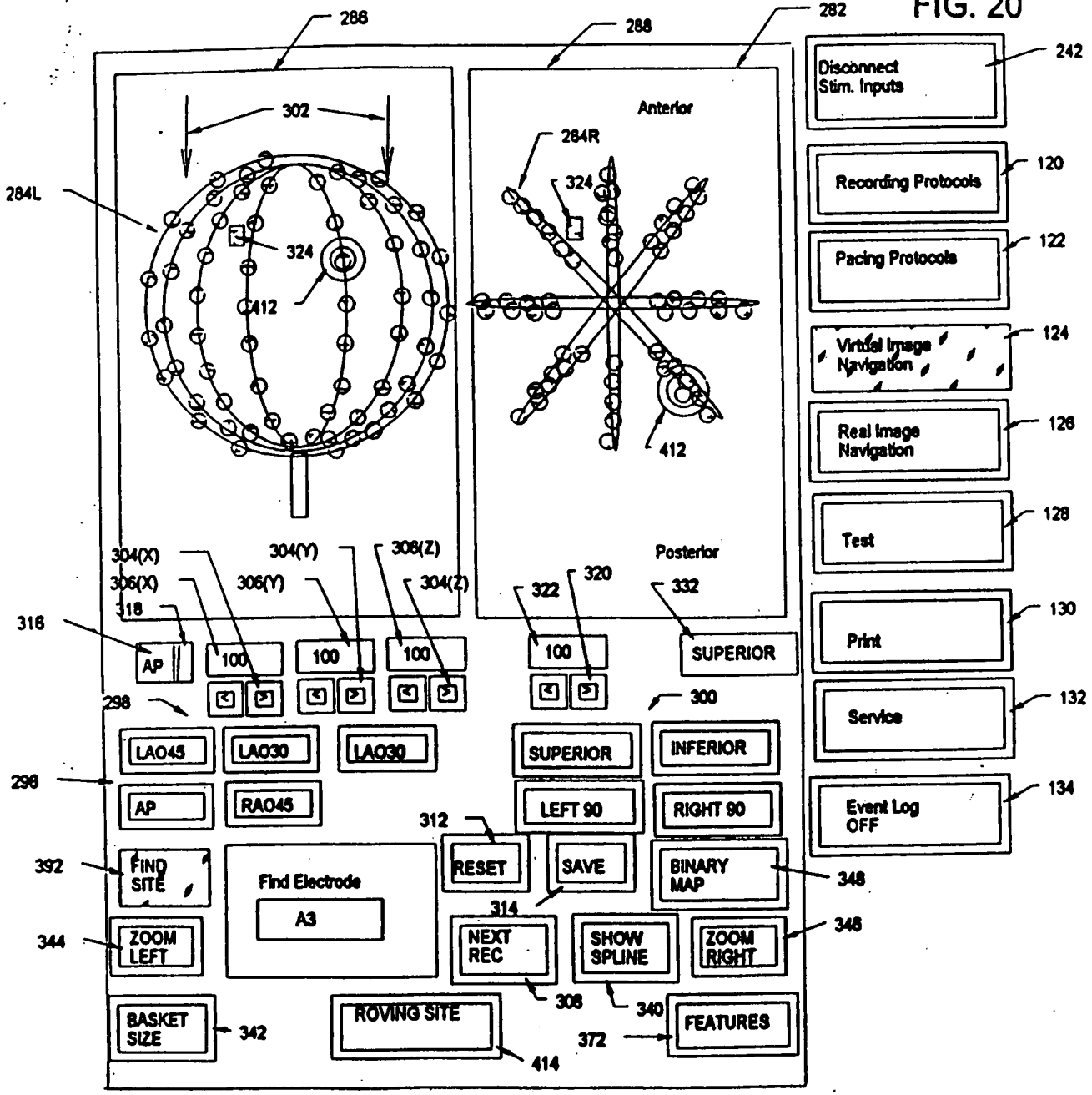
286
288
282
302
284L
324
412
Anterior
284R
324
412
Posterior
304(X)
306(X)
304(Y)
306(Y)
306(Z)
304(Z)
318
316
AP
100
100
100
100
322
320
332
SUPERIOR
298
300
LAO45
LAO30
LAO30
SUPERIOR
INFERIOR
296
AP
RAO45
LEFT 90
RIGHT 90
312
392
FIND SITE
Find Electrode
A3
RESET
SAVE
BINARY MAP
348
314
344
ZOOM LEFT
NEXT REC
SHOW SPLINE
ZOOM RIGHT
346
308
340
BASKET SIZE
342
ROVING SITE
414
372
FEATURES
Disconnect Stim. Inputs
242
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 21

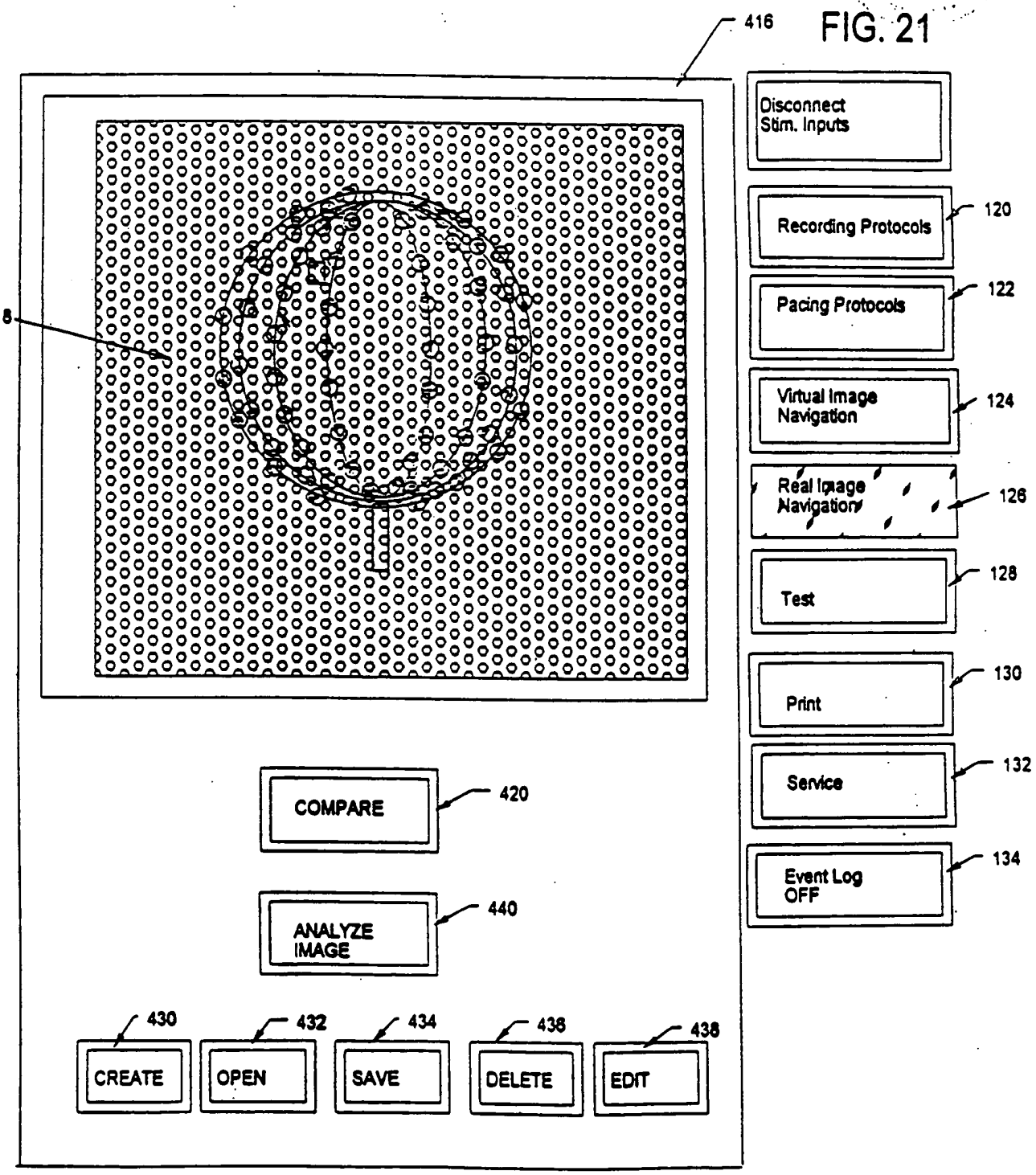

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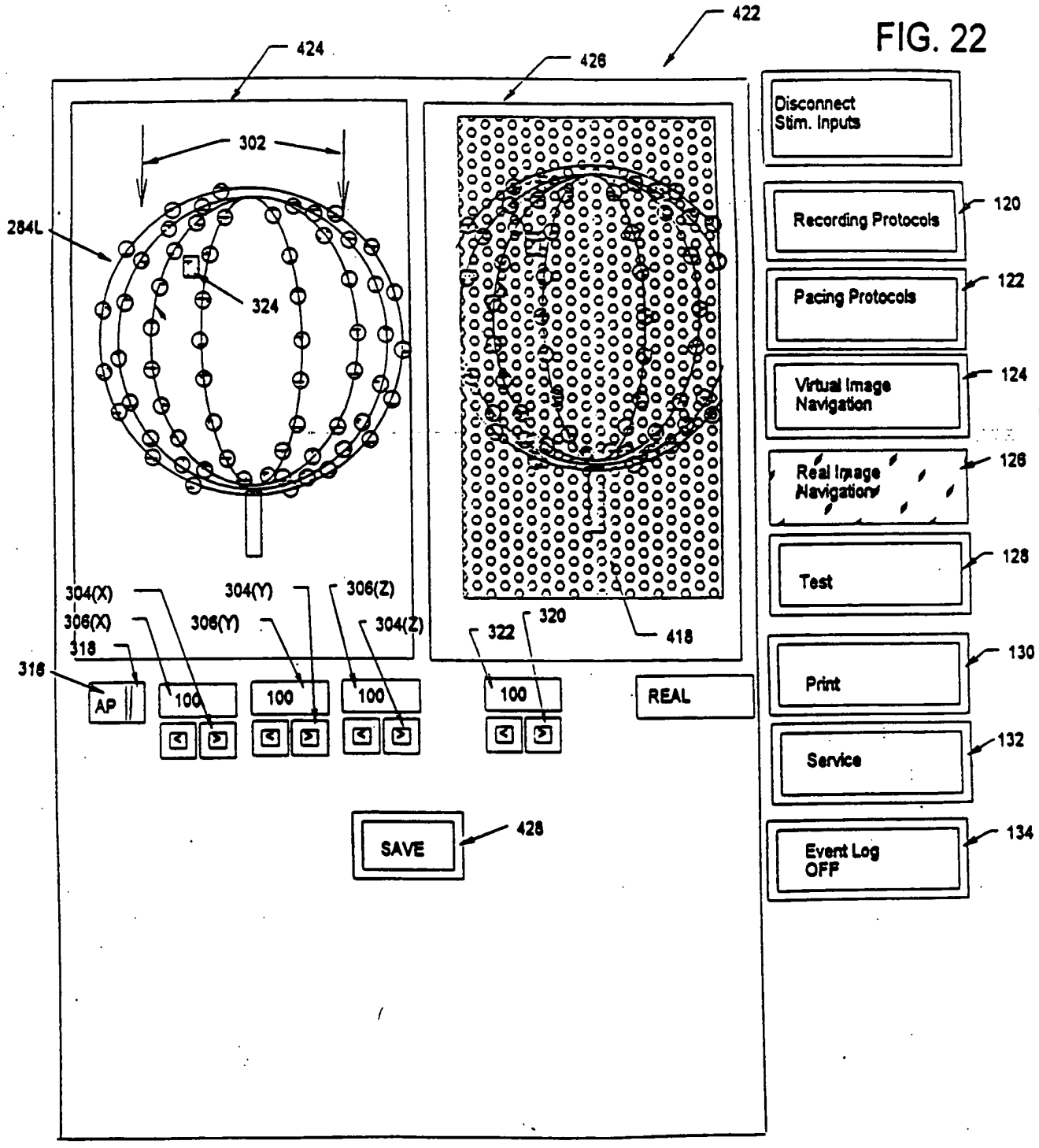
FIG. 22



20020045 050202

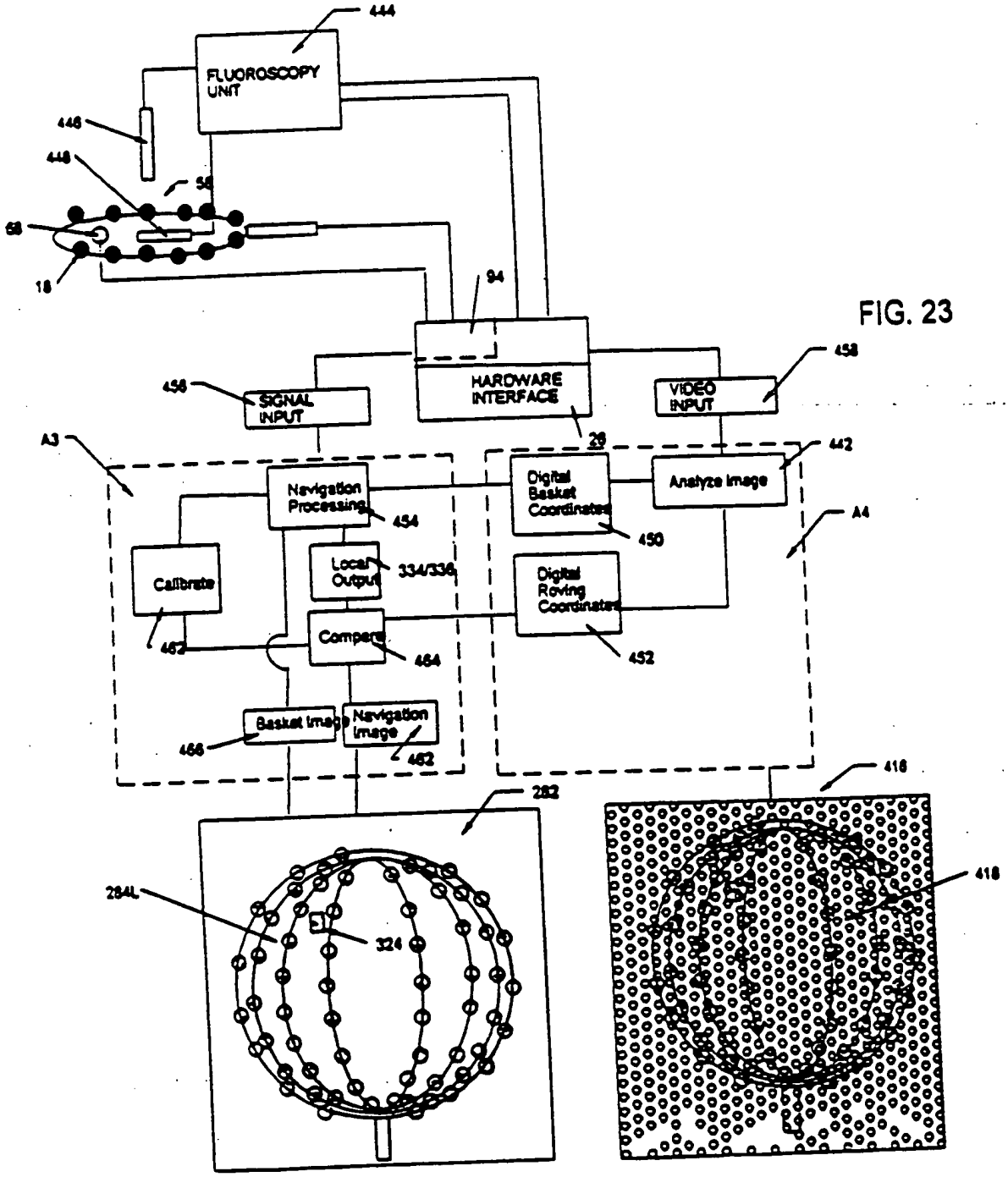

444
FLUOROSCOPY UNIT
446
448
56
68
18
94
HARDWARE INTERFACE
456
SIGNAL INPUT
458
VIDEO INPUT
28
A3
442
Navigation Processing
454
Digital Basket Coordinates
450
Analyze Image
A4
Calibrate
462
Local Output
334/336
Digital Roving Coordinates
452
Compare
464
Basket Image
466
Navigation Image
462
282
284L
324
416
418

FIG. 23

FIG. 24

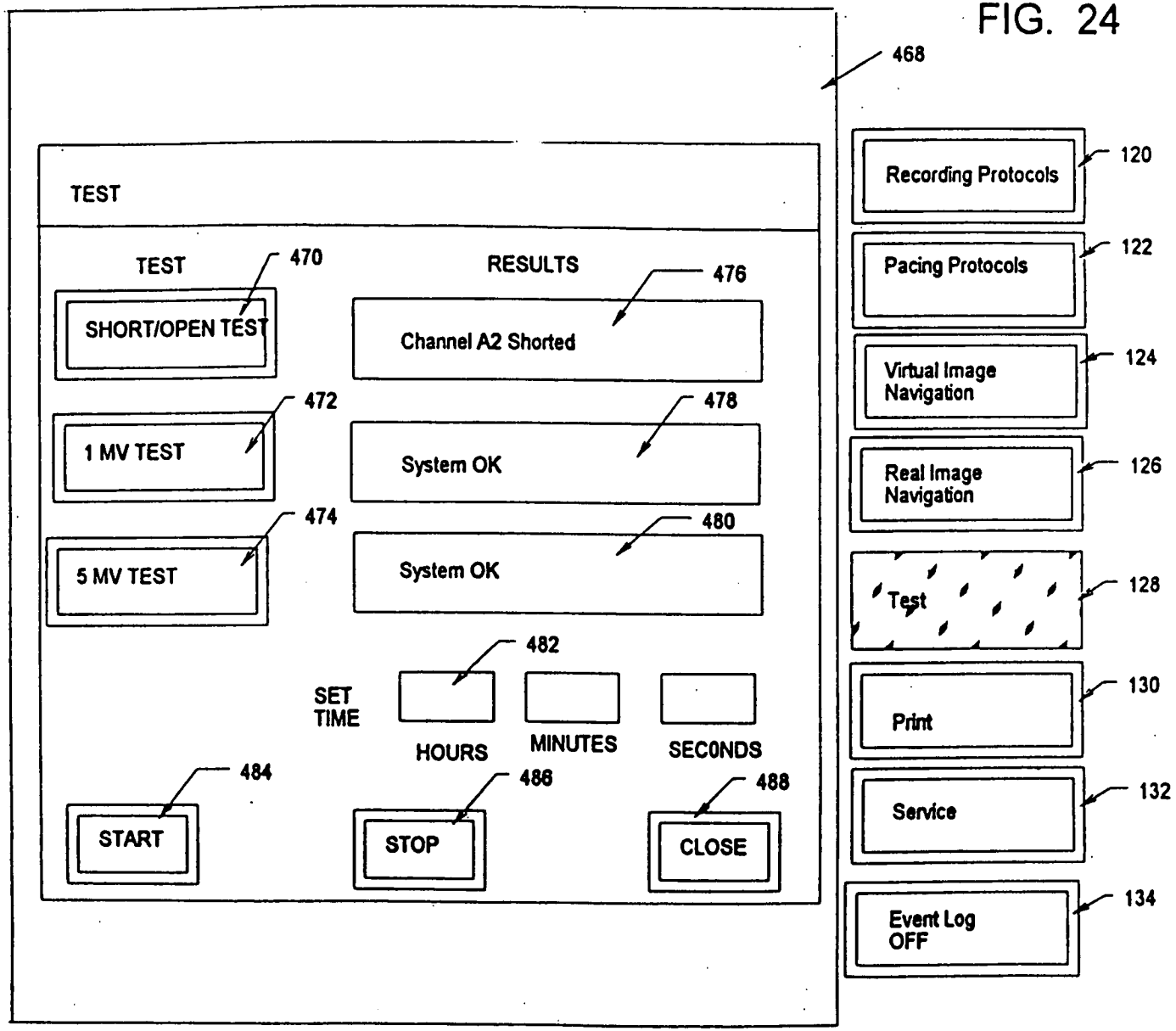

468
TEST
TEST
470
SHORT/OPEN TEST
472
1 MV TEST
474
5 MV TEST
RESULTS
476
Channel A2 Shorted
478
System OK
480
System OK
482
SET TIME
HOURS
MINUTES
SECONDS
484
START
486
STOP
488
CLOSE
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 25

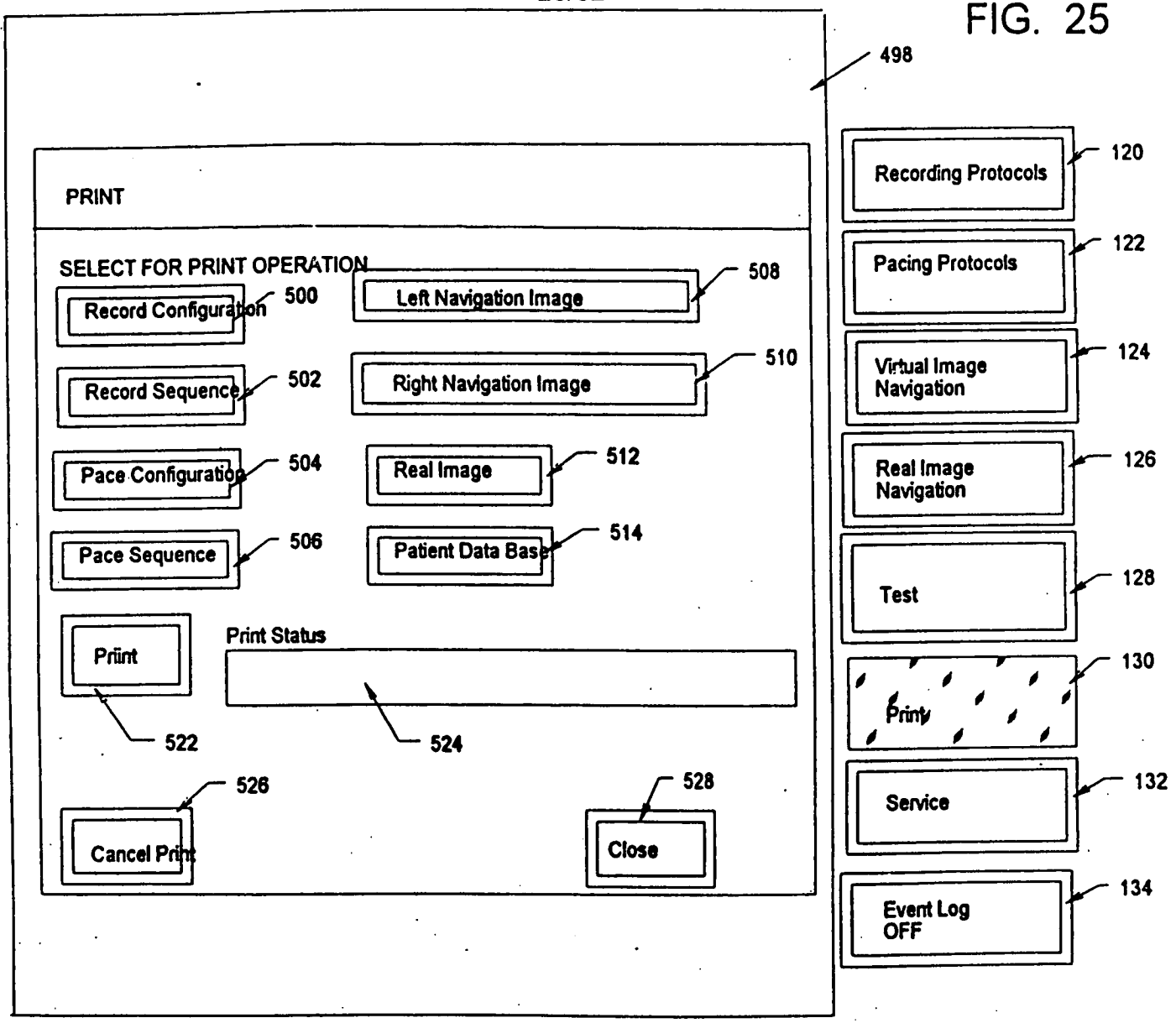

498
PRINT
SELECT FOR PRINT OPERATION
Record Configuration
500
Record Sequence
502
Pace Configuration
504
Pace Sequence
506
Left Navigation Image
508
Right Navigation Image
510
Real Image
512
Patient Data Base
514
Print
Print Status
522
524
526
528
Cancel Print
Close
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 26

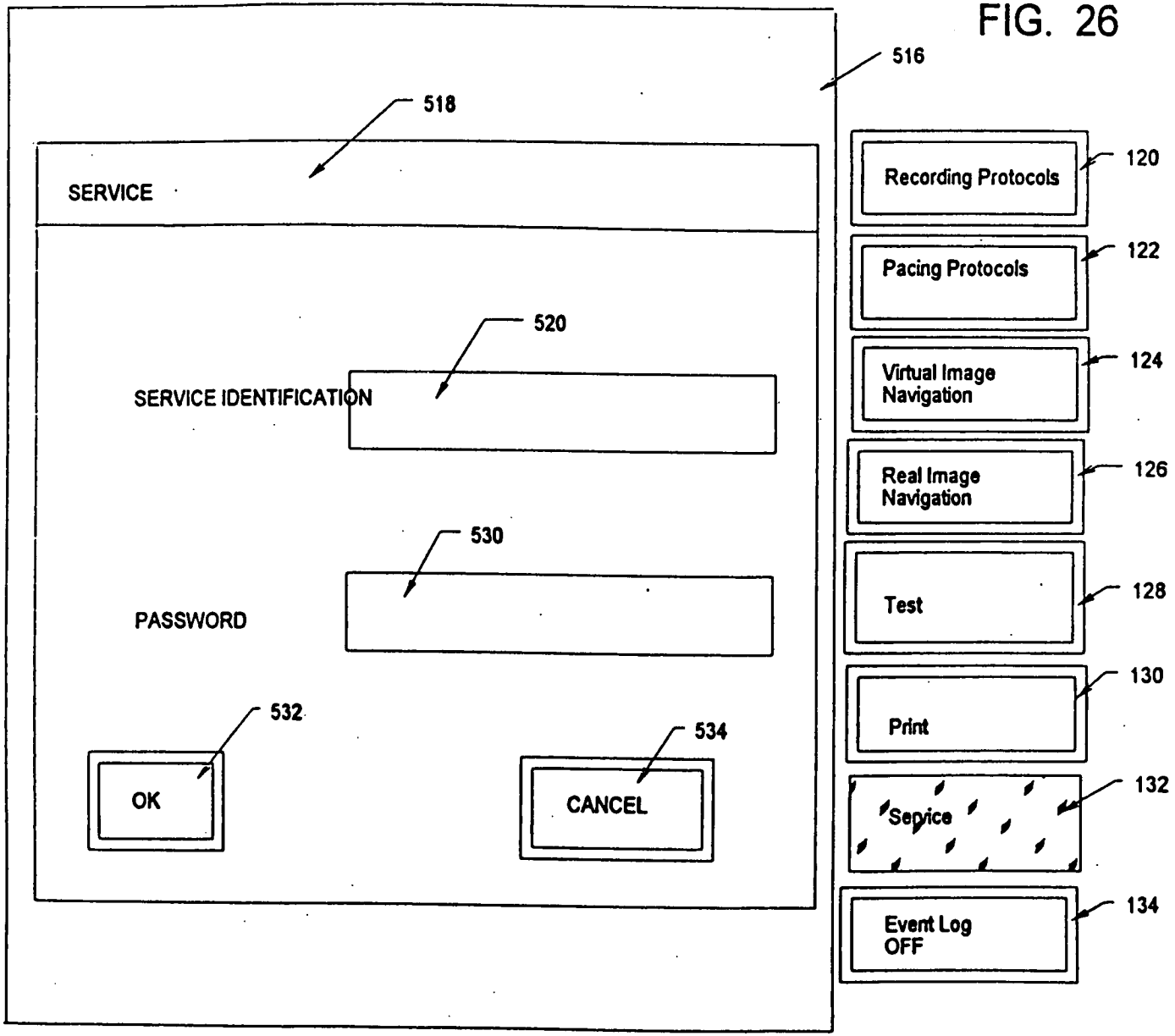

516
518
SERVICE
520
SERVICE IDENTIFICATION
530
PASSWORD
532
OK
534
CANCEL
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 27

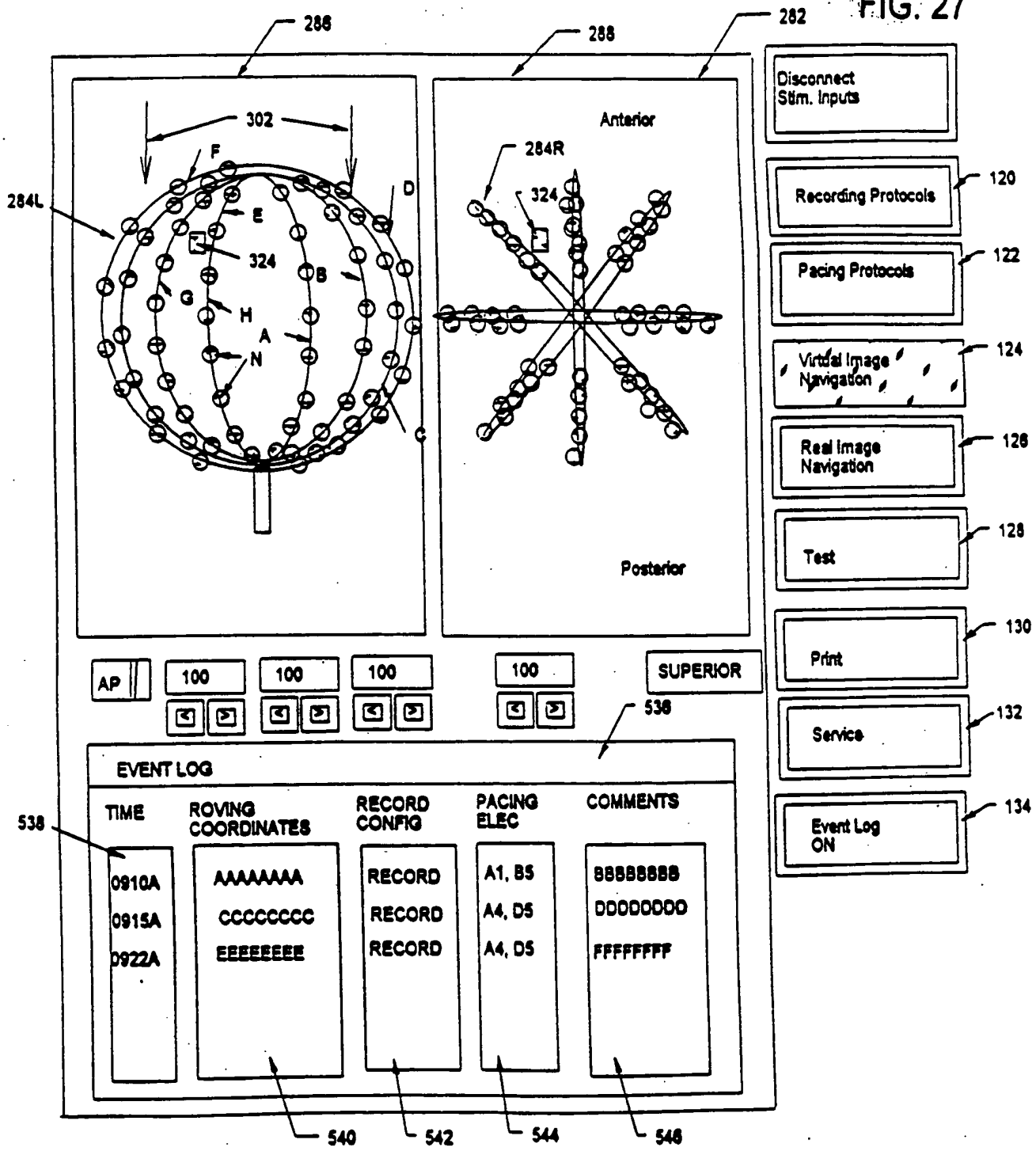

286
288
282
302
F
284L
D
E
324
B
G
H
A
N
C
Anterior
284R
324
Posterior
Disconnect Stim. Inputs
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log ON
134
AP
100
100
100
100
SUPERIOR
536
EVENT LOG
538
TIME
ROVING COORDINATES
RECORD CONFIG
PACING ELEC
COMMENTS
0910A
0915A
0922A
AAAAAAAA
CCCCCCCC
EEEEEEEE
RECORD
RECORD
RECORD
A1, B5
A4, D5
A4, D5
88888888
DDDDDDDD
FFFFFFFF
540
542
544
546

FIG. 28

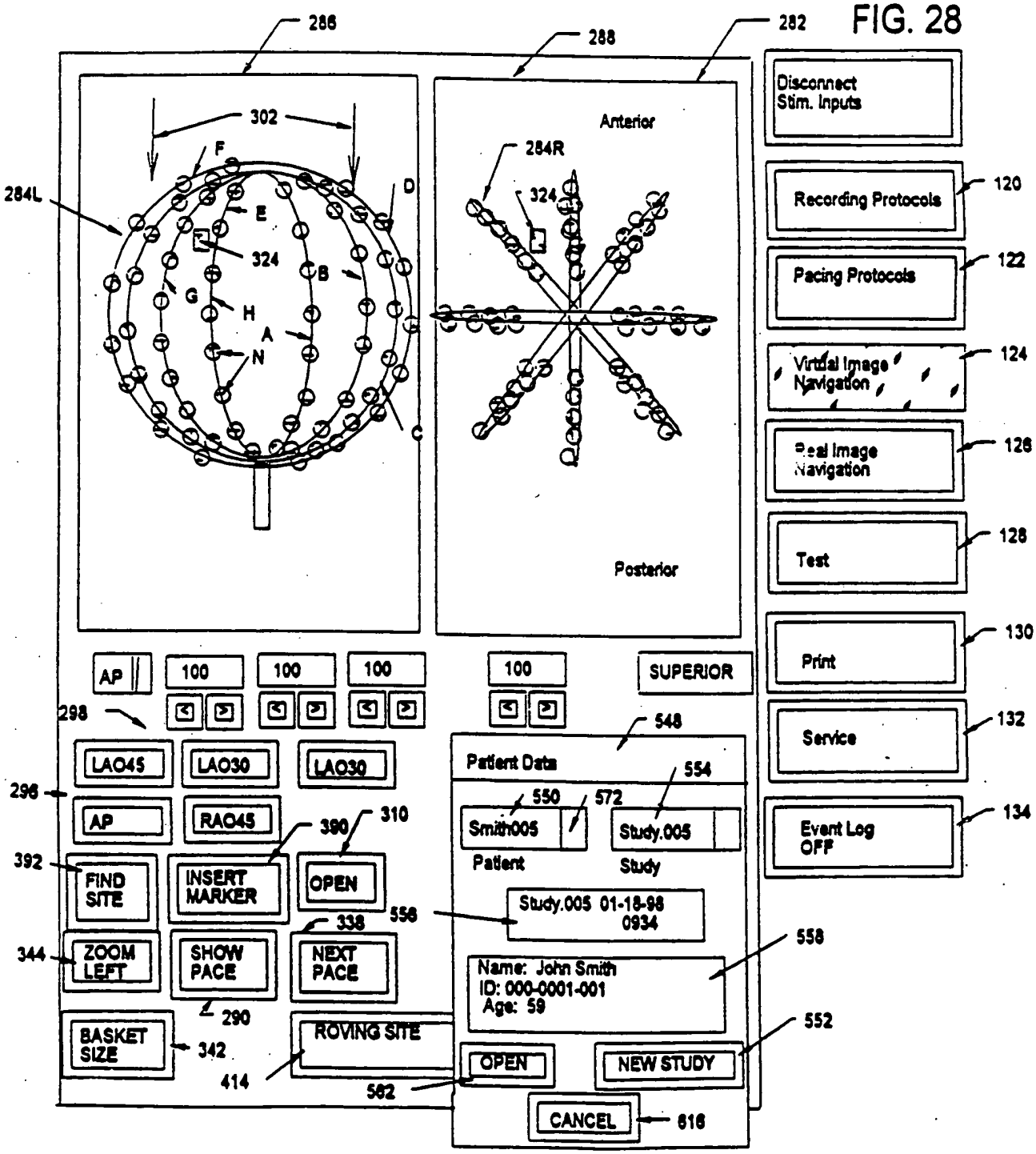
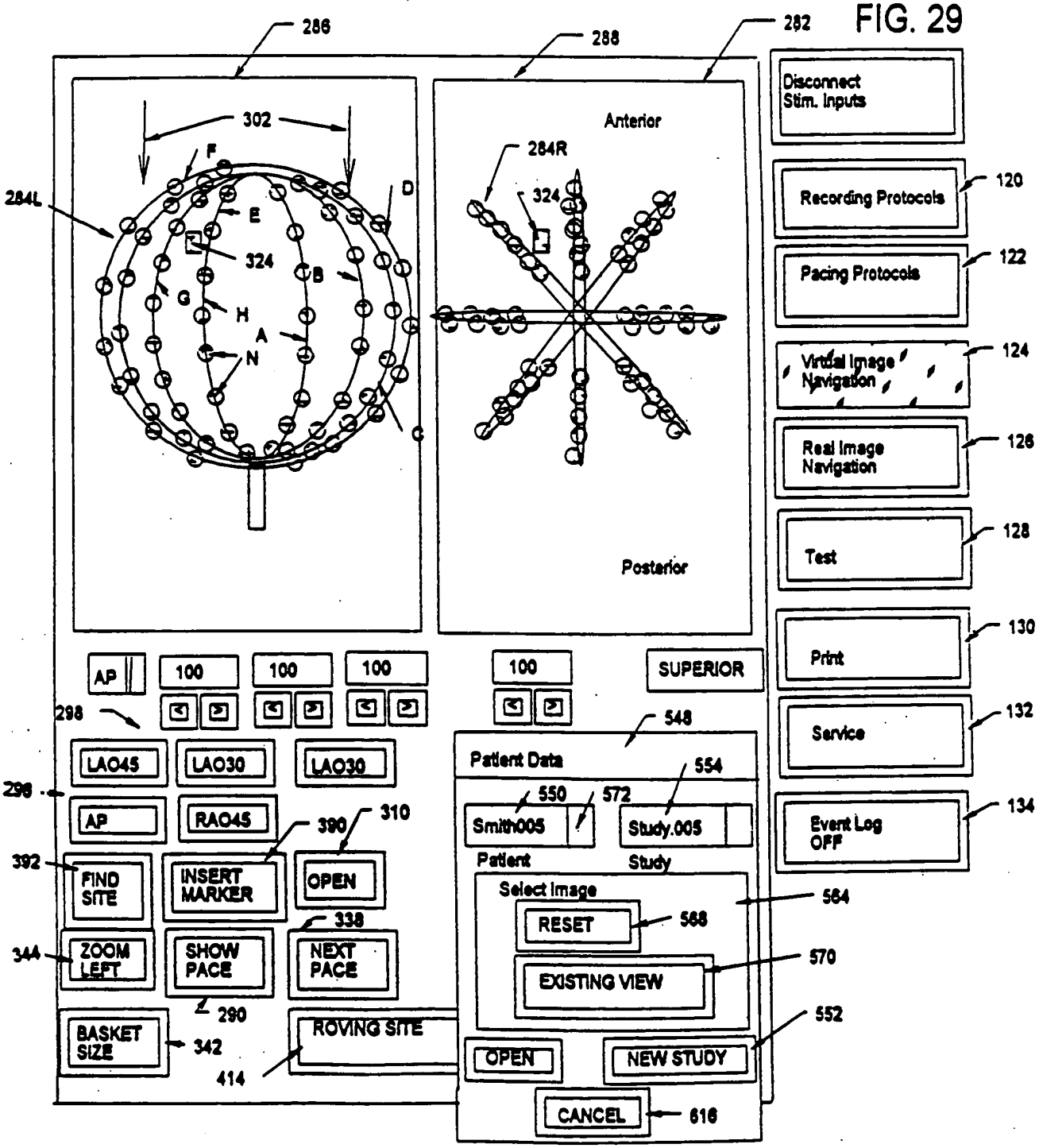

286
288
282
302
F
D
E
284L
324
B
G
H
A
N
C
Anterior
284R
324
Posterior
Disconnect Stim. Inputs
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134
AP
100
100
100
100
SUPERIOR
298
548
LAO45
LAO30
LAO30
Patient Data
554
296
550
572
AP
RAO45
390
310
Smith005
Study.005
392
FIND SITE
INSERT MARKER
OPEN
Patient
Study
Study.005 01-18-98 0934
556
338
558
344
ZOOM LEFT
SHOW PACE
NEXT PACE
Name: John Smith
ID: 000-0001-001
Age: 59
290
552
BASKET SIZE
342
ROVING SITE
OPEN
NEW STUDY
414
562
CANCEL
616

FIG. 29



10039415 - 032002

FIG. 30

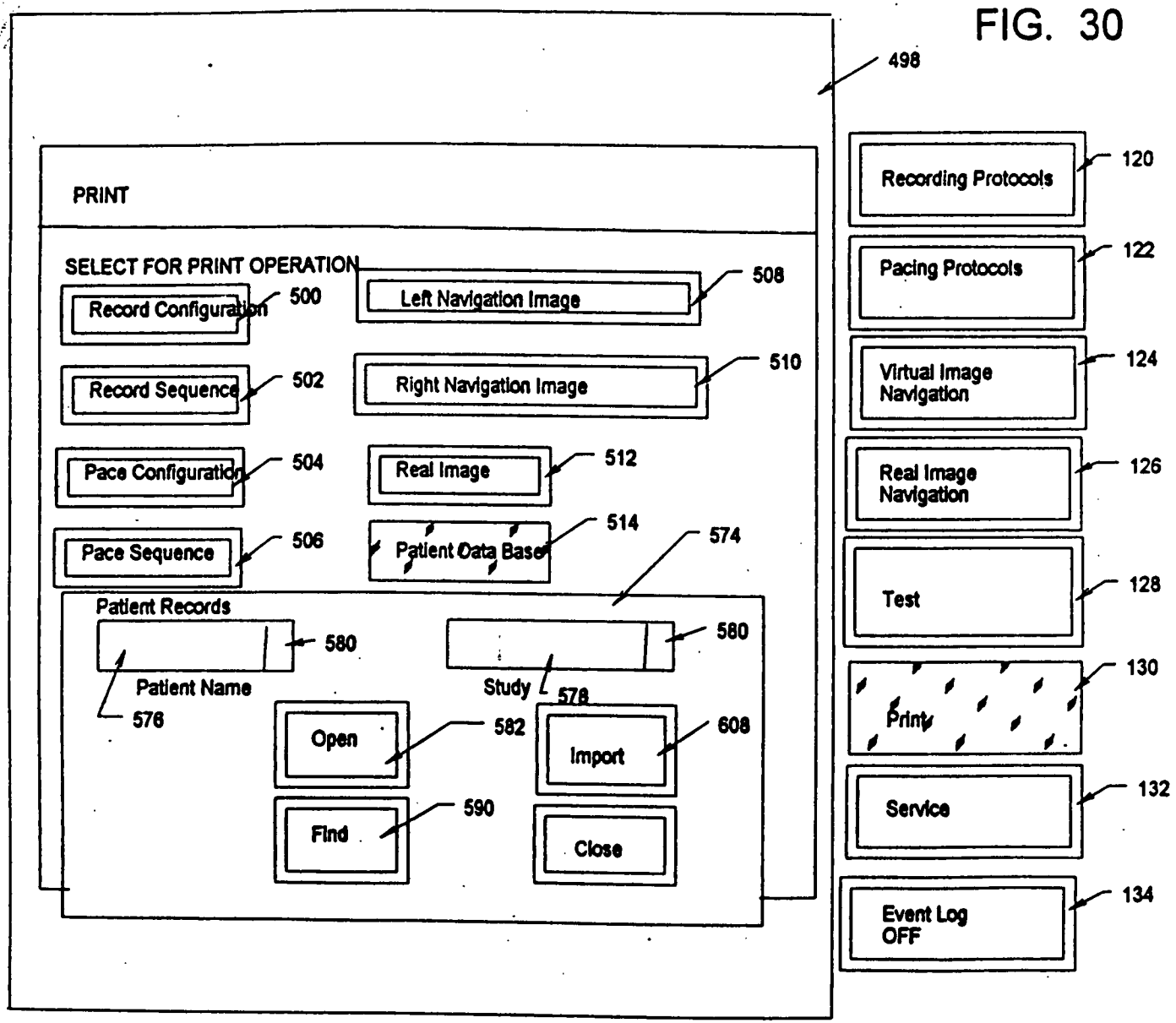

498
PRINT
SELECT FOR PRINT OPERATION
Record Configuration
500
Record Sequence
502
Pace Configuration
504
Pace Sequence
506
Left Navigation Image
508
Right Navigation Image
510
Real Image
512
Patient Data Base
514
574
Patient Records
580
Patient Name
576
580
Study
578
Open
582
Find
590
Import
608
Close
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 31

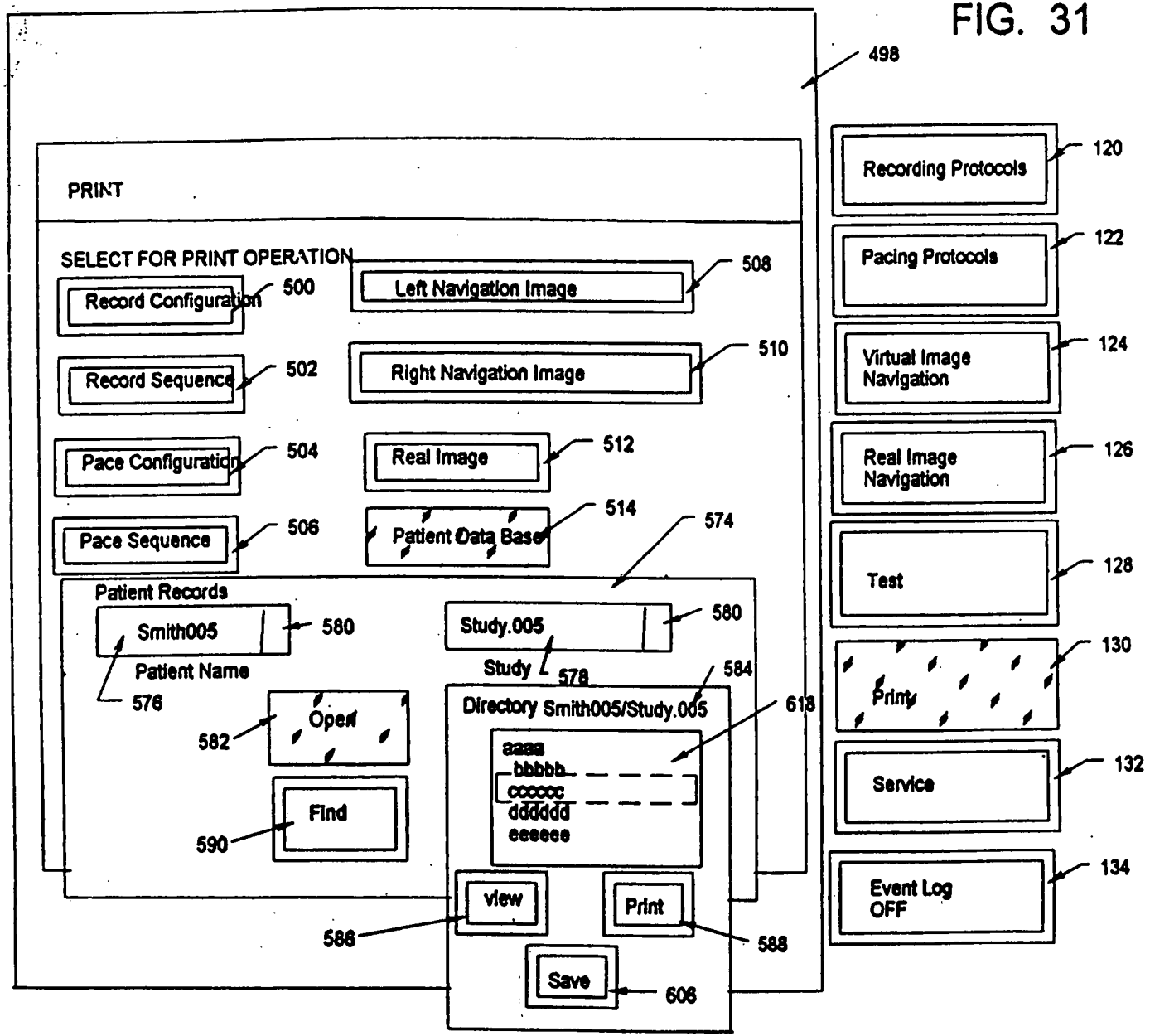
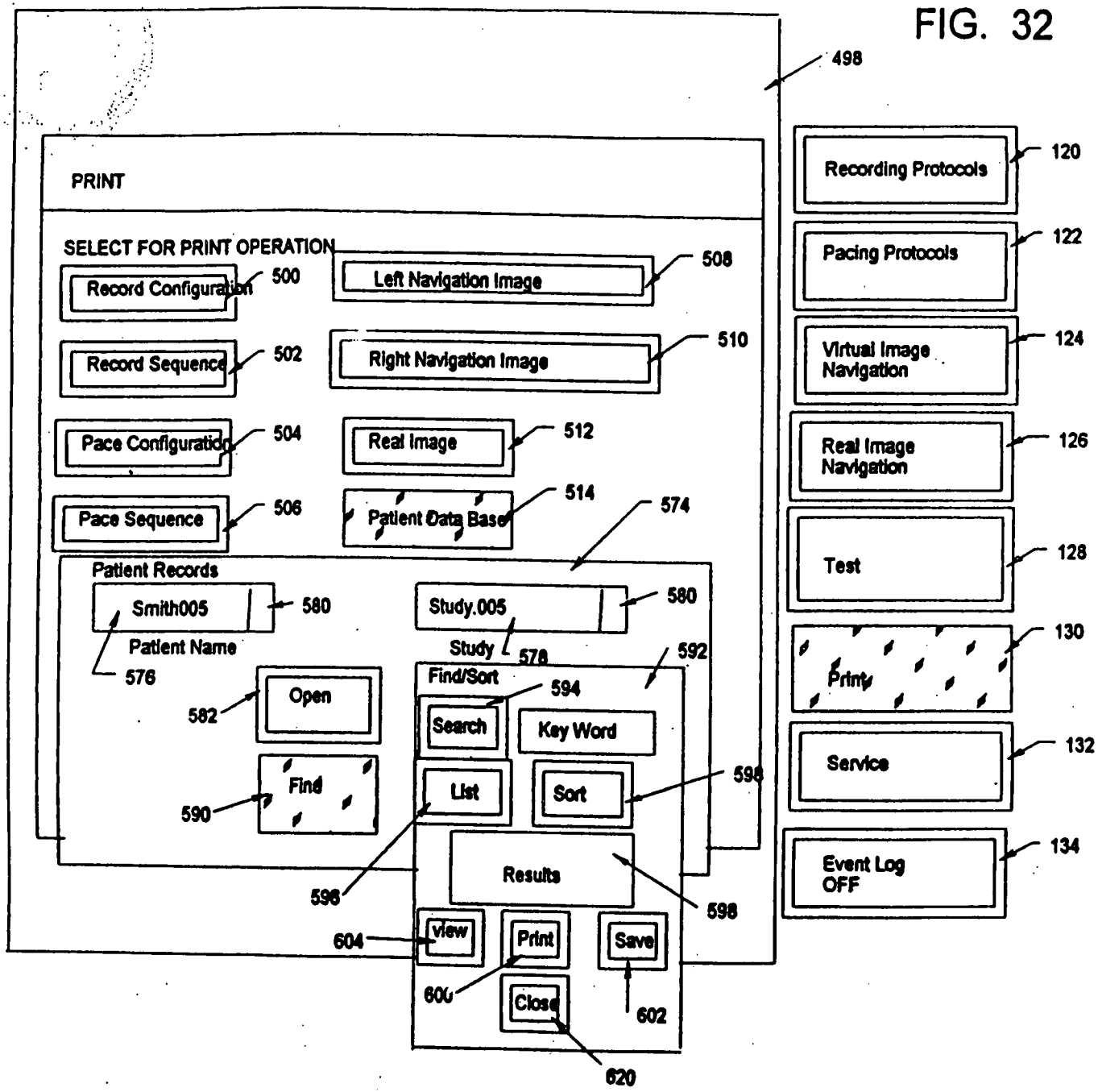

498
PRINT
SELECT FOR PRINT OPERATION
Record Configuration
500
Record Sequence
502
Pace Configuration
504
Pace Sequence
506
Left Navigation Image
508
Right Navigation Image
510
Real Image
512
Patient Data Base
514
574
Patient Records
Smith005
580
Patient Name
576
Study.005
580
Study
578
584
Directory Smith005/Study.005
618
aaaa
bbbbb
cccccc
dddddd
eeeeee
Open
582
Find
590
view
Print
586
588
Save
606
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134

FIG. 32


498
PRINT
SELECT FOR PRINT OPERATION
Record Configuration
500
Record Sequence
502
Pace Configuration
504
Pace Sequence
506
Left Navigation Image
508
Right Navigation Image
510
Real Image
512
Patient Data Base
514
574
Patient Records
Smith005
580
Patient Name
576
Study.005
580
Study
578
592
Find/Sort
594
Search
Key Word
List
Sort
598
Results
598
596
Open
582
Find
590
view
Print
Save
604
600
602
Close
620
Recording Protocols
120
Pacing Protocols
122
Virtual Image Navigation
124
Real Image Navigation
126
Test
128
Print
130
Service
132
Event Log OFF
134